

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1369.—VOL. XXXI.

LONDON, SATURDAY, NOVEMBER 16, 1861.

(WITH SUPPLEMENT) (STAMPED.....SIXPENCE. UNSTAMPED.....FIVEPENCE.)

**MR. JAMES CROFTS, SHAREBROKER,**  
No. 1, FINCH LANE, CORNHILL. (Established 17 years.)  
Mr. Crofts has to notice that, with the exception of worthless shares (the crop of which is diminishing on the market), adventurers in mines will do well to continue to hold both dividend and progressive stocks.  
Mr. Crofts has the following shares for bona fide sale, net, and all calls paid: where prices are not affixed an offer is wanted:—10 Old Tolgus, £29½; 17 North Frances, £3; 25 Leland Consols, 30s.; 30 Bryntail, £2; 70 West Condurrow, 20s.; 100 Nanteos and Penrhwy, 1 Providence, £46; 25 Grylls, 7 Cargill for £102½; 15 Great Caradon, 6s. 6d.; 33 Okef Tor, 20 West Devon Consols, 20 South Livel, 20 South Killy, 3 Stray Park, £32; 30 Great South Tolgus, £4½; 300 Bedford Consols, 1s. 2d.; 200 East Rudnick.  
\* Holders of mining shares DIFFICULT OF SALE in the OPEN MARKET may hear of purchasers, and also parties IN ARREAR OF CALLS, or sued by merchants, may learn their true legal position and be advised how to act, by applying to Mr. Crofts.  
\* The course of (financial) events in France will tend to resuscitate business, both for investment and speculation, of which capitalists are advised to take immediate advantage.

**MR. JAMES LANE, No. 44, THREADNEEDLE STREET, LONDON, E.C.**  
JAMES LANE has FOR SALE, at net prices:—20 Arthur, 14s. 6d.; 40 Carn Camborne, 18s.; 20 Charlotte, 10 Devon Union, 12s. 6d.; 50 Dale, 14s.; 10 East Carn Brea, £29½; 5 East Caradon, £26½; 10 East Russell, £27½; 50 Great Wheel Marthia, 28s. 6d.; 10 Great Treguise, 5 Gnomens, £2½; 20 Great Retallack, 18s. 6d.; 2 Herodfoot, £2½; 10 Hingston Down, £4½; 15 Harriet, 20s.; 50 Lady Bertha, 15s.; 20 Ludcott, £2½; 2 Long Lake, £11½; 10 Marke Valley, £29½; 20 North Hallenbeagle, par; 20 New Treleigh, 31s. 6d.; 20 North Downs, £2½; 5 Old Tolgus United, £29½; 10 North Frances, £3; 20 North Miners, 22s.; 20 Penhale Moor, £1; Redmoor, 50 Ribden, 5s.; 10 Rosewall Hill and Ransom, 30s.; 10 South Condurrow, 9s. 6d.; 50 Sortridge, 15s. 9d.; 2 Seton, £11½; 2 Trelawny, £14½; 4 West Caradon, £42; 2 West Rose Down, £14; 20 Wheel Edward, 40s.; 10 Wheel Grylls, £11; 20 Unity, 17s. 6d.; 20 West Silver Bank, £3 paid; 10 Wheel Anne; and 100 Worthing, 11s.

**PETER WATSON, ENGLISH AND FOREIGN STOCK, SHARE, AND MINING OFFICES,**  
79, OLD BROAD STREET, LONDON, E.C.  
Telegraphic messages to Buy or Sell Mine Shares punctually attended to.  
Bankers: Union Bank of London.

**TO SHAREHOLDERS IN ENGLISH AND FOREIGN RAILWAYS, MINES, BANKS, DOCKS, AND MISCELLANEOUS SHARES.**  
—At the urgent request of several London merchants, Stock and Mining Exchange, and local Stock Exchange Members, as well as a ready support from my friends and connections in different parts of the country, I have been induced to undertake the publication of "The London Daily Record and Share List," which will give the latest prices, and sent out every evening to the different parts of the country, which will be in the hands of subscribers 12 hours sooner than any of the London daily papers, and which will not give so much information as "The London Daily Record and Share List." The growing importance and profitable pursuit of the mining interest (especially in Cornwall and Devonshire Mines), and in which some fifty millions sterling is invested, shows the desirability of a daily record of prices and closing quotations of all the principal dividend and progressive mines. This list, which is published every evening at 5 o'clock, contains the transactions in the Stock and Mining Exchanges, English and foreign railways, English and foreign mines, joint-stock banks, American railways and securities, docks, and miscellaneous shares, price of Consols, dates of fortnightly settling-days, &c. Annual subscribers, £1 10s.; single copy, 3d.; by post, £2 2s.—Published by PETER WATSON, 79, Old Broad-street, London, E.C.

**PETER WATSON IS A BUYER OF—**  
3 Wheel Seton, £106. 25 Ludcott, £2½. 5 Stray Park, £31.  
75 Wheel Grylls, £12. 50 North Miners, 19s. 6d. 1 South Caradon, £312.  
2 West Caradon, £24. 5 East Carn Brea, £29. 200 Wheel Unity, 17s.  
3 Bryn Gwlog, £25. 10 South Carn Brea, £4. 100 East Russell, £29½.  
79, Old Broad-street, London, E.C.

**MR. W. LELEAN, MINE SHAREBROKER,**  
11, ROYAL EXCHANGE, LONDON, E.C.

**MR. T. ROSEWARNE, 75, OLD BROAD STREET, LONDON, E.C., has BUSINESS TO TRANSACT IN—**  
5 Cook's Kitchen, £28. 10 Long Lake, £11½. 3 Stray Park, £32½ (call paid).  
100 Drake Walls, 19s. 100 North Miners, 21s. 6d. 40 Wheel Arthur, 13s. 6d.  
40 East Caradon, £26½. 100 North Robert, 21s. 6d. 30 Wheel Norris, £24½.  
50 E. Grenville, 33s. 9d. 100 North Downs, £24½. 30 Wheel Seton, £109.  
70 East Russell, £27½. 5 North Trekerby, £24½. 10 Wheel Unity, £4½.  
10 East Carn Brea, £29½. 5 Marke Valley, £29½. 20 West Sharp Tor, £32.  
10 Herodfoot, £27. 200 Sortridge, 15s. 6d. 10 Wheel Grylls, £12½.  
100 Hingston, £4½. 2 South Caradon, £29½. 10 Wheel Grylls, £12½.  
An OFFER WANTED for—  
Bedford Consols. Calstock Consols. North Haled.

**MESSRS. R. HORLEY AND CO., SWORN STOCK, SHARE, AND MINING BROKERS, 45, CORNHILL, E.C.** (late of 2, Royal Exchange-building), TRANSACT EVERY DESCRIPTION OF MINING BUSINESS, on commission only, and are in a position to obtain reliable information respecting all dividend and progressive mines.  
N.B.—Messrs. HORLEY and Co. publish a Weekly Mining List, with the closing prices every Wednesday, and will be most happy to forward the same (gratis) on application.

**NOTICE OF REMOVAL.**  
**MR. JOSEPH GREGORY has REMOVED** from Bank Chambers, Lothbury, to No. 2, GREAT ST. HELEN'S, BISHOPSGATE STREET, where all communications are to be addressed.  
Bankers: City Bank, Threadneedle-street.  
Commission on purchase and sale of shares, 1½ per cent.

**OFFICE OF REFERENCE FOR THE BRYNABOR LEAD MINING COMPANY, CARDIGANSHIRE.**

**MR. JAMES HUME, SHAREBROKER, 74, OLD BROAD STREET, LONDON, E.C.,**  
Is a BUYER of—  
East Carn Brea, £29½. Ury, £4½. Hingston Down, £29½.  
And will SELL—  
50 Sortridge, 15s. 6d. 5 Caradon Consols, £11½. 50 Great Retallack, 20s.  
50 Hingston, £4½. 10 Marke Valley, £29½. 20 Unity, 18s.  
20 Merilyn, 15s. 5 East Caradon, £29½. 20 North Robert, 22s. 6d.  
Commission on buying or selling, ¼ per cent. The "Mining Share Monitor" free for 6d.  
Bankers: London Joint-Stock Bank.

**MR. WM. HENDERSON has REMOVED** from Alderley Edge to LONDON, and from the extremely favourable results obtained by two works now in operation on Spanish and Cornish copper ores, he is now in a POSITION TO FURNISH EVERY INFORMATION ON THE WORKING of his processes on every variety of POOR COPPER ORES. Silver, gold, cobalt, nickel, and tin ores can also be treated to great advantage.  
Mr. Henderson is PREPARED TO GRANT LICENSES to any extent, and to UNDERTAKE THE PROFITABLE REDUCTION of COPPER ORES, if above 1 per cent. produce, and in sufficiently large quantities.  
Parties desirous of seeing their own ores operated upon, to the extent of 50 tons, can be accommodated on reasonable terms.  
All communications to be addressed to 44, Addison-road, Kensington, W.

**INVESTMENTS FOR CAPITAL.**  
**S H A R E P S**  
RAILWAY, BANKING, AND MINING CIRCULAR,  
Gratis, and post free.  
Contains RELIABLE INFORMATION AND ADVICE to CAPITALISTS, REPORTS of MINES, RAILWAYS, BANKS, &c., RECORD of MARKET PRICES, and is the only SAFE GUIDE for the INVESTMENT of CAPITAL.  
HENRY GOULD SHARP, 32, POULTRY, LONDON E.C.

**MR. GEORGE BUDGE, SHAREBROKER, No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C.** (Established 14 years), has FOR SALE 2 West Seton, 20 East Caradon, £29½; 50 West Tolvadden, 12s. 6d.; 2 South Frances, £11½; 5 South Bryn Gwlog; 50 North Miners, 21s.; 1 South Caradon, £300; 1 Devon Great Consols; 2 Wheel Seton; 3 Brynford Hall, £16; 100 Great South Tolgus, £4½; 5 Herodfoot; 10 Marke Valley, £29½; 50 North Downs, £25 6s. 9d.; 50 Dale, 15s.; 3 West Caradon, £24; 4 Wheel Trelawny; 15 Wheel Grylls, £10½; 100 Great Wheel Marthia; 30 Tincroft, £28 11s.; 5 Silver Lake; 25 Great Wheel Bury; 5 East Basset; 50 Charlotte United; 5 Herward United, £8½; 3 Rosewarne United, £22; 2 Carn Brea, £29½; 5 West Bryn Gwlog, £17; 3 Wheel Reeth; 1 North Rosekar; 3 Great Wheel Fortune; 5 Stray Park; 50 Lady Bertha, 14s.; 20 North Haled; 100 Worthing; 30 Camborne Vean; 30 Tolvadden, £2; 5 Caradon Consols, £10½; 50 North Robert, 22s. 6d.; 5 St. John del Rey; 20 United Mexican; 20 West Polmar, 11s.; 100 Gawton, 7s.; 100 Ribden, 4s. 9d.; 50 Great Retallack.  
Holders of shares difficult of sale may find purchasers through Mr. Budge.

**G E O R G E M O O R E,**  
1, CROWN COURT, THREADNEEDLE STREET.  
In any business that GEORGE MOORE is favoured with, in which he is the buyer, he will give CASH ON RECEIPT OF TRANSFER.

**JAMES HERRON has FOR SALE the following SHARES, at the prices quoted, and FREE OF COMMISSION:—**  
15 Alfred Cons., 16s. 9d. 20 Great Retallack. 20 Sortridge Cons., 14s. 9d.  
30 Bryn Gwlog, £25½. 25 Great Caradon, 6s. 30 St. Day, 11s. 3d.  
2 Billins, £16½. 20 Gawton, 7s. 6d. 2 S. Bryn Gwlog, £7½.  
50 Bedford Consols, 9d. 10 Hingston Down, £4½. 1 South Wheel Frances, £100½.  
1 Basset, £38. 1 Herodfoot, £37½. 20 Silver Bank (20s. paid) 9s. 6d.  
1 Carn Brea, £31½. 2 Harward Unit, £8½. 2 Silver Lake. 2 South Basset.  
5 Colbr., £25. 10 Holmshush, £1 6s. 9d. 1 South Caradon, £32½.  
50 Celn. Cleece, 10s. 4 Kitty (Leland), £2 7s. 6d. 1 Trelawny, £15 15s.  
20 Camborne Vean, 42s. 6d. 20 Kelly Bray, 16s. 9d. 50 Tamar Con., £1 2s. 6d.  
30 Carn Camborne, 17s. 9d. 50 Lady Bertha, 15s. 1 West Seton, £202½.  
2 Cargill, £15. 5 Long Lake, £10½. 2 West Basset, £17½.  
2 Cook's Kitchen, £29½. 10 Ludcott, £2 8s. 9d. 5 West Stray Park, £34½.  
3 Craddock Moor, £25. 50 Molland. 20 Wheel Unity, 18s. 9d.  
20 Charlotte United, 21s. 9d. 10 Marke Valley, £29 16s. 9d. 1 West Seton, £202½.  
50 Cudra, 28s. 9d. 1 Mary Ann, £14 15s. 9d. 2 West Basset, £17½.  
20 Colcombe, £25. 50 North Miners, 22s. 9d. 50 West Basset, £17½.  
20 Crake, £2 15s. 20 North Basset, £2 18s. 9d. 50 Worthing, 10s. 6d.  
1 Caradon Consols. 2 North Trekerby, £24½. 1 Wendron Cons., £13½.  
20 Crookhaven, 7s. 6d. 20 North Downs, £2½. 30 Wh. Grenville, 34s.  
2 Celn Brynwo. 10 New Frances, 7s. 6d. 10 Wheel Harriet, 20s. 9d.  
30 Dale, 15s. 6d. 1 No. Rosekar, £16. 30 Wheel Crebor, 10s. 9d.  
20 Drake Walls, 16s. 9d. 20 North Buller, £34½. 10 Wheel Edward, 37s. 9d.  
30 Devon Union. 10 North Frances, £2 13s. 5 Wheel Ury, £4½.  
2 Ding Dong, £4. 10 North Trekerby, £24½. 20 West Polmar, 10s.  
20 Deep Level, 7s. 9d. 20 North Haled, 10s. 20 West Devon Cons., 3s.  
20 East Russell, £2 12s. 6d. 5 North Croft, 32s. 6d. 1 West Sharp Tor, £39.  
5 East Carn Brea, £29½. 5 Old Tolgus, £10½. 20 West Tolmar, 6s. 9d.  
20 East Rosewarne, 23s. 9d. 30 Okef Tor (offer wanted). 20 Wheel Moyle.  
20 East Grenville, 35s. 9d. 2 Providence, £45. 40 West South Caradon, 16s. 9d.  
5 East Caradon, £26 11s. 9d. 10 Par Consols, £8½. 1 West Caradon, £45.  
30 East Kongsberg (fully paid up), 36s. 30 Prosper Unit, 37s. 6d. 5 Wheel Grylls, £11½.  
20 East del Rey, 55s. 9d. 1 Rosewarne Unit, £22½. 1 Wheel Harriet, £19.  
10 East Dev. Cons., £1½. 30 Rosewall Hill & Ransom, 29s. 6d. 1 West Frances.  
5 Great S. Tolgus, £4 10s. 40 Ribden, 5s. 3d. 2 W. Bryn Gwlog, £16½.  
1 Gt. Fortune, £12 18s. 9d. 10 St. John del Rey, £52½. 5 West Trevelyan, £2½.  
1 Grambler, £13. 2 Stray Park, £32½. 20 West Wendron, 5s. 9d.  
25 Great Alfred, 6s. 9d. 20 Stray Park, £32½. 20 Wheel Arthur, 12s. 9d.  
50 Great Moelwyn, £1 11s. 20 So. Condurrow, 9s. 6d. 10 West Condurrow (offer wanted).  
paid), 19s. 20 South Caradon Hooper. 30 West Silver Bank, 20s.  
25 Great Grims, 17s. 1 South Caradon, £29½. 30 West Silver Bank, 20s.  
20 Great Martha, 26s. 2 St. Ives Cons., £30½.  
And is a BUYER of 30 St. John del Rey, 100 North Miners, 70 Tincroft, 20 South Carn Brea, 2 South Caradon, 100 Rosewall Hill and Ransom, and 1 Lisabene.  
The mining public have in many instances sustained very heavy losses during the last 12 months, arising from the indiscriminate purchase of mines, several of which never had any intrinsic value or reasonable chance of success. The abundance of money, as shown by the Bank reducing the rate of interest to 3 per cent., combined with the high price of metals, will tend materially to enhance the value of many mines at present selling at a heavy discount, and a careful selection of which would, in a short period, retrieve the losses already incurred.  
Mr. HERRON will be happy to benefit by his experience those who wish to invest their money in a judicious manner.  
2, Adam's-court, Old Broad-street, November 15, 1861.

**MESSRS. VIVIAN AND REYNOLDS, 68, OLD BROAD STREET, LONDON, E.C., MINING ENGINEERS, INSPECTORS OF MINES, COMMISSION, AND GENERAL AGENTS FOR THE PURCHASE OR SALE OF MINE SHARES, RAILWAY, AND EVERY OTHER DESCRIPTION OF STOCK.**  
Commission on share transactions, 1½ per cent. on £100 and above, and 2½ per cent. for less sums.

**MR. C. POWELL, MINE SHAREBROKER,**  
2, SPREAD EAGLE COURT, FINCH LANE, LONDON, E.C.

**MR. EDWARD COOKE, SHAREBROKER,**  
5, HERCULES PASSAGE, near the Stock Exchange, LONDON, TRANSACTS BUSINESS for principals in RAILWAY, MINE, BANK, and INSURANCE SHARES, &c., at the usual Stock Exchange rates of commission, and from the contiguity of his office to that institution he is enabled to operate promptly on all orders entrusted to his charge, either by telegraph or post. The following SHARES FOR SALE, at net prices:—  
50 Great Retallack, 10s. 100 Baidak, 10s.  
15 East Grenville, 35s. 25 Tolvadden, £29½ (call pd). 10 Nanteos, £c. 8s. 6d.  
50 Carn Camborne, 19s. 2 Grambler, £16½. 25 Prosper United.  
50 Wheel Grylls, 34s. 10 South Devon Iron (Preference), 7s. 6d. 10 Bedford Consols, 3s.  
50 Wheel Unity, 17s. (call paid). 2 Wheel Seton, £110. 10 Calvadnock, £7½.  
20 Wheel Emma (Buckfastleigh), 24s. 6d. 5 East Carn Brea, £29½. 50 South Condurrow, 9s. 6d.  
BUYER of any number of Wheel Moyle, Wheel Grylls, East Carn Brea, Tincroft, or North Miners shares at the current price.  
Nov. 15, 1861. Bankers: London and Westminster, Lothbury.

**MR. GEORGE BATTERS, 5, COWPER'S COURT, BIRCHIN LANE, DEALER IN BRITISH MINING SHARES AND OTHER SECURITIES.**  
Mr. BATTERS, from long experience and intimate acquaintance with all Mining Stocks, can advise as to investment of capital at the most advantageous prices, and has made a selection of Dividend paying and sound Progressive Stocks in which he can with confidence recommend investments at present depressed prices. The favourable turn in the market for metals, and the further reduction in the Bank's rate of interest to 3 per cent., would point to prices having seen their lowest for the present.  
Mr. BATTERS is a BUYER of Bryn Gwlog, Carn Brea, Cook's Kitchen, Devon Great Consols, East Caradon, East Carn Brea, Herodfoot, Marke Valley, North Downs, Providence, South Caradon, Stray Park, West Caradon, and Wheel Seton.—And is a SELLER of 10 Bryn Gwlog, £26; 1 East Basset, £70; 25 East Caradon, £26½; 50 East Grenville, 35s.; 10 Long Lake, £11; 50 Marke Valley, £29½; 50 North Downs, £25½; 10 Old Tolgus, £29; 1 South Frances, £105; 50 Wheel Moyle, 35s.; 50 Wheel Grenville, 34s.; and 2 Wheel Seton, £110.

**MR. BATTERS has SPECIAL BUSINESS in the SHARES of EAST CARADON and MARKE VALLEY.**

**WILLIAM SEWARD, MINING BROKER, STOCK AND SHAREDEALER, 26, THROGMORTON STREET, LONDON, E.C.**  
Commission, 1¼ per cent. on £100 and above, and 2¼ per cent. on less sums.

**RICHARD CLIFT, MINE SHAREDEALER,**  
late of Redruth, now 48, THREADNEEDLE-STREET, LONDON, where all letters are to be addressed.

**MR. THOMAS SPARGO, MINING ENGINEER, STOCK AND SHAREBROKER, 224 and 225, GRESHAM HOUSE, OLD BROAD STREET, LONDON,** is enabled, through his long experience as a practical miner, aided by his bi-monthly visits to Cornwall, Devon, and Wales, to give sound advice and accurate information on the position and prospects of the various mines in those counties.  
Mr. SPARGO has for sale SHARES in MINES paying from 20 to 25 per cent. per annum in bi-monthly or quarterly dividends, and also a number of shares in progressive mines at a low figure.  
The following works are published by Mr. Spargo, viz.:—Statistics and Observations upon the Mines of Devon and Cornwall for 1859; ditto for 1860; Physical, Geological, and Parish Map of Cornwall; Geological Maps of the Various Mining Districts of Cornwall, embracing upwards of seven hundred mines, showing boundary lines of every mine, with the lodes, cross-roads, and elvan courses traversing each; and a relief Model Map of Cornwall. The mines in these maps are arranged under three heads, viz.:—Dividend mines; mines returning ores, not paying dividends; progressive mines, and mines abandoned, thus showing the real position of every mine, with the surrounding districts, so that the mere tyro may, at a glance, understand the character the character and value of the property in which they may wish to invest.  
Dividends received, calls paid, and all orders negotiated on a commission of 2½ per cent.

**GEORGE RICE, SHAREBROKER, 1, FINCH LANE CORNHILL, has FOR SALE:—**  
10 Bedford United, £5½. 20 Great Retallack, 17s. 6d. 1 Wheel Seton, £110.  
10 Caradon Consols, £10½. 30 Lady Bertha, 16s. 1 West Seton, £205.  
10 East Caradon, £26½. 5 Marke Valley, £29½. 30 Wheel Cupid, 12s.  
10 E. Carn Brea, £29 6s. 3d. 50 Sortridge, 15s. 6d. 2 Stray Park, £32.  
20 East Grenville, 33s. 6d. 5 Wheel Ludcott, £29½. 30 Unity, 17s. 6d.  
1 Grambler, £16½. 30 Redmoor, 7s. 6d. 3 Wheel Grylls, £14.  
10 Hingston Down, £4½. 2 West Caradon.  
SPECIAL BUSINESS AND ADVICE in East Caradon, Marke Valley, Wheel Seton, East Carn Brea, Caradon Consols, Hingston Down, Wheel Grylls, and West Caradon.  
East Caradon.—Report: 60 east, £45; 60 west, £10; 60 east, £55.  
Money advanced on mining shares at moderate rates of interest.  
Nov. 15, 1861. Bankers: Bank of London.

**MR. T. P. THOMAS, MINING AGENT AND AUCTIONEER, 2, CROWN COURT, THREADNEEDLE STREET, LONDON.**

**MR. T. E. W. THOMAS, MINING AGENT AND GENERAL MINING SHAREDEALER, 16, HACKINS HEY, LIVERPOOL.**

**JOHN ROBERT PIKE, GENERAL SHAREDEALER, 3, PINNERS COURT, OLD BROAD STREET, LONDON, E.C.**

**S H A R E S W A N T E D:—**  
1 Botallack, £190. 1 South Tolgus, £39. Grambler & St. Aubyn, £13½.  
Great Fortune, £11½. 5 West Caradon, £29½. 1 South Basset, an offer.  
1 Levant. Clifford Anal., £35. Lady Bertha, 15s.  
North Grambler. Kitty (Leland), £5½. 1 Copper Hill, £100.  
North Basset, £29½. 1 Margaret, £39. 1 Wheel Seton, £112½.  
Trefusis, Lewis, and other shares not saleable in the market.  
FOR SALE:—  
1 Wheel Reeth, £27½. 5 North Rosekar, £17½. 15 Trelawny, offer wanted.  
10 West Stray Park, £4. 3 Rosewarne Unit, £22½. 1 South Basset, an offer.  
40 New Treleigh, £13. 20 Camborne Vean, £22½. 25 Tyingham, offer wanted.  
3 West Trevelyan, £2½. 75 St. Day United, 11s. 6d. Commission, 1¼ per cent.  
H. B. Rye, 77, Old Broad-street, E.C.

**JAMES B. BRENCHEY, 78, OLD BROAD STREET, LONDON, E.C., has SPECIAL BUSINESS in the following.** Applicants are solicited to state the number of shares on enquiry. Cash given on receipt of transfer certificates:—Botallack, Carn Brea, Cook's Kitchen, East Basset, Great Fortune, Herodfoot, North Downs, Par Consols, Providence, South Caradon, South Frances, St. Ives Consols, Tamar Consols, Tincroft, West Caradon, West Seton, Killy, Ludcott, Margaret, Mary Ann, Trelawny, Wheel Basset. Also in Calvadnock, Drake Walls, East Carn Brea, Great Retallack, Hingston Down, North Basset, Lady Bertha, New Treleigh, New Frances, North Trekerby, North Robert, North Croft, Tendon, Sortridge, South Basset, South Caradon Hooper, South Carn Brea, Stray Park, Tencrom, West Par, West Frances, Harriet, Norris, Prosper United, Ury, Unity, and Union.

**FREDERICK WILLIAM MANSELL, MINING OFFICES, 1, HATTON COURT, THREADNEEDLE STREET, LONDON, E.C.**  
Bankers: London Joint-Stock Bank.

**MR. JAMES HAMMON, STOCK AND SHAREDEALER, 1, CROWN COURT, THREADNEEDLE STREET, LONDON.**

**JOHN RISLEY, SHAREBROKER, 52, LOMBARD STREET, LONDON, E.C.**

**MR. E. GOMPERS, MINING OFFICES, 3, CROWN CHAMBERS, THREADNEEDLE STREET, LONDON, E.C.**  
BUSINESS TRANSACTED IN BRITISH AND FOREIGN STOCKS AND SHARES. Terms, 1¼ per cent.—Bankers: London and Westminster, Lothbury.

**MR. R. H. M. JACKMAN, MINING AND SHAREBROKER, 2, ADAM'S COURT, OLD BROAD STREET, TRANSACTS BUSINESS IN EVERY DESCRIPTION OF SHARES, at closest prices net, or on commission, but not being a dealer buys and sells only on orders confided to him.**

**SHARES FOR SALE, free of any commission:—**  
10 No. Haled, offer wanted. 20 North Robert, 19s. 6d. 20 North Downs, £5½.  
10 Old Tolgus, £29½. 1 East Basset, £67½. 50 Sortridge Cons., 15s. 3d.  
30 Arthur, 13s. 10 Dyrnswan, offer wanted. 2 Stray Park, £31.  
40 Unity, 17s. 6d. 20 New Frances, 6s. 6d. 10 Ludcott, £2½.  
Nov. 15, 1861. Bankers: London and Westminster, Lothbury.

**MR. J. S. PHILLIPS, C.E. AND M.E. SHAREBROKER, &c., 12, ST. MICHAEL'S ALLEY, CORNHILL, LONDON,** has returned from a tour through the Cornish mines.  
See prospectus of North Pool Mining Company of this day.

**JOHN GLEDHILL AND CO. MINE AGENTS AND SHAREBROKERS, MINING OFFICES, CORN EXCHANGE, LEEDS.**

**MR. J. SYKES, LEAK, STAFFORDSHIRE.**  
is in a position to DEAL SPECIALLY in RIBDEN and DALE SHARES. Reliable information.

**RALPH MOORE, MINING ENGINEER, has REMOVED to 156, WEST GEORGE STREET, GLASGOW.**  
REPORTS and VALUATIONS MADE OF MINERAL PROPERTY, PLANS of MINERAL FITTINGS, MACHINERY, RAILWAYS, &c. SURFACE and MINERAL SURVEYING.

**MR. M. GILDROY STEWART, CONSULTING MINING ENGINEER, COLLIERY VIEWER AND SURVEYOR, INSPECTOR AND VALUER OF MINES AND MACHINERY, BEDMINSTER, BRISTOL.**

**MR. W. R. WILLIAMS, MINING ENGINEER, LAND AND MINERAL SURVEYOR, DOLGELLY.**

**MESSRS. C. TOOKEY, F.C.S., AND M. W. JOHNSON, F.C.S., ASSAYERS, ANALYSTS, AND CONSULTING CHEMISTS, LABORATORIES, 44, LINCOLN'S INN FIELDS, W.C.**

**MESSRS. THOMAS PENROSE and THOMAS PRICE** UNDERTAKE ASSAYS and ANALYSES of EVERY DESCRIPTION of MINERAL PRODUCT, FUEL, and MANURES, at Messrs. Richardson and Co.'s Assay Office and Laboratory, Copper Ore Wharves, Swansea.

**MR. F. LISABE, C.E. AND C.M.E.,** may be consulted by letter addressed to No. 35, GLOUCESTER CRESCENT, REGENTS PARK, N.W.; or personally at his office, No. 25, MOORGATE STREET, CITY, upon all matters connected with mining.

**VALUABLE IRON MINE FOR SALE.**  
Apply to Mr. R. SYMONS, C.E., 11, Parade, Truro.

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## Original Correspondence.

## PRACTICAL MINING—WINDING MACHINERY.

SIR,—In reference to Capt. Tonkin's paper "On the Comparative Merits of Ropes, Chains, Kibbles, and Skips, for Winding Ore," lately read before the Miners' Association of Cornwall, and the subsequent discussions thereon in the Journal, I beg to say that, having had seven years' experience with wire-rope, I can fully endorse the favourable opinion entertained of it; and the advantages of using it appear to me to be so many, that I consider we, metallic miners, ought to provide suitable arrangements for it and bring it into general use. Capt. Tonkin does not, however, seem to be very strong in his recommendation of the skip for winding, apparently intimating that the great weight of the skip is an equivalent to the extra friction of the kibble. From this I conceive Capt. Tonkin may not be quite clear as to the comparative weights of the skip and kibble necessary to do a given amount of work. After many years' experience with the kibble in shafts at almost all angles, and some experience with the skip, I am decidedly in favour of the latter; and consider that a skip to wind a certain quantity of stuff need not exceed much, if any, the weight of the kibble; because the skip, not being subject to drawing on its side and knocking about the shaft, may be made of a lighter iron plate than the kibble which is thus exposed. We are working a skip here which, complete, weighs less than 6 cwt., with which we wind 10 cwt. of ore stuff at a time. The sides of it are of  $\frac{1}{2}$ -in. iron plate, stayed with angle iron, and the bottom of  $\frac{3}{4}$ -in. plate, with light iron wheels, and axles riveted to the side plates. I may add, also, that we are able to wind stuff from the 100 fm. level, in an underlie shaft, at 6d. per ton.

In point of economy metallic miners can, perhaps, scarcely hope to compete with coal miners in winding, because of the superiority of the perpendicular shafts of the latter profession; but it seems to me, if the former were to apply skips and wire-ropes generally, using all the necessary appliances which science and their mechanical ingenuity can command, to break angles and diminish friction, they might advance considerably before the old method of using kibbles and chains, and would not lag far behind the coal miners in this respect, with all the natural advantages they may possess. If, in laying out a mine, it is possible to sink a perpendicular shaft, drive the necessary cross-cuts, and work the mine afterwards with it, at the same expense, and equal advantages attendant on an underlie shaft on the lode, I would, of course, recommend the former; but the angle of underlie of most lodes is so great, that long cross-cuts are necessary to reach it from a perpendicular shaft, and the expense of driving these cross-cuts, with the additional cost of having to remove the stuff through them from the lode to the shaft afterwards, is, in my opinion, more than an equivalent for any extra cost of winding with skips through a shaft sunk on the lode.—*Parys Mine, Bangor, Nov. 8.* W. VIVIAN.

## COAL AND IRON MINING v. COPPER AND TIN MINING.

SIR,—I have read in the Journal the various remarks of correspondents relative to the system of mining adopted in Cornwall and Devon, in which it seems the writers generally condemn all metallic mining which is not conducted on the system adopted in coal and iron mines. This to me is one of the weakest foundations on which they could have based their arguments. Every tyro in mining knows that the lodes of copper and tin in Cornwall and Devon differ materially from beds of coal and iron, and hence the system adopted to work the one will not do to work the other. The means to be employed to remove or smooth every obstacle in our path through this world must be varied according to the nature of the obstacle to be overcome. The physician does not subscribe for his patient one kind of medicine to remedy every disease with which they may be afflicted. The chemist or assayer does not employ one kind of flux or acid to assay or analyse every kind of metal or stone with which he is acquainted. No more does the practical copper and tin miner employ the one expensive mode of mining, that of sinking large and expensive perpendicular shafts, erecting powerful machinery thereon, and driving extensive cross-cuts, laid down with rails, before he ascertains for a certainty that the minerals in the lodes will warrant such an expensive outlay; but the means he uses are in accordance with the obstacle to be overcome, or the nature of the object he may have in view. What interests me most, however, is the letter of your Bristol correspondent, "A. B.," in which he takes to himself credit for knowledge which no finite mind can grasp—that of knowing the thoughts of men's hearts, and the knowledge and capabilities they possess for the duties of life, without, perhaps, having a personal knowledge of one-twentieth of the men he writes about. With respect to his lauded system of conveying men to and from their work through a shaft 110 fathoms deep, with a wire rope attached to a steam-engine, like so many head of cattle for slaughter, let me tell him the system is as old as the patriarchal age, and 99 per cent. of the mining community in Cornwall and Devon condemn it *in toto* as a thing of the past. I presume that he has forgotten the Man-Engine erected in Cornwall. If, however, "A. B." and his friends would like to see the system of coal and iron mining adopted in copper and tin mines, I will recommend them to a promising copper sett lying idle, not more than eight miles from this town, where they may adopt their loved system, and work it to their hearts' content. I will also recommend them to a Cornish captain living not 20 miles from the sett, who is capable of conducting any mode of working which they may require to have carried out. From my personal acquaintance with mines in various parts of the globe, I venture to say that the mining captains and miners of Cornwall and Devon are second to none in the known world, and for general good conduct, intelligence, courage, perseverance, and industry they are an honour and a bulwark to the land which gave them birth. Before finishing, let me tell "A. B." never to recommend another person to do in copper and tin mines what he would not do in them himself. *South Molton, Devon.* A TRAVELLER.

## THE CORNISH SYSTEM OF MINING, BY LADDER-WAYS AND KIBBLES.

SIR,—I am pleased to learn that Capt. Tonkin, at least, does not admit that there is a difference between raising a ton of coals and a ton of copper or tin ore. This is satisfactory, as some of your correspondents attempted to persuade the public that copper or tin ore could not be drawn from the mines like iron and coal. I hope Capt. Tonkin will also admit that the unproductive labour of Cornish miners is very considerably injuring their health, and increasing the cost, and ought to be reduced to its minimum amount, quite as much as in iron mines and collieries. Our ironstone miners and colliers would not work for treble wages were they compelled to go down to their work, to the depth of 200 fms., and come up again, by ladders.

Mr. Tonkin asks "if the 4d. per ton" includes all charges? It includes the following charges:—Enginemens, landers, timbermen, ropes, chains, timber, iron, cages, grease, oil, &c.—in short, everything connected with the cost and wear and tear of the raising of the coal and rubbish from the levels to the surface; it includes, also, the cost of lowering and raising the men, and the management. The value of the coal consumed does not exceed 1d., and where the coals cost 16s. per ton, as in Cornwall, it would only add about 4d. per ton to the cost of raising the men and the products. In some mines the cost per ton does not exceed 3d., at depths varying from 150 to 200 fms. Shareholders in Devon and Cornwall mines are familiar with the sight of broken and holey kibbles lying about in heaps, broken timber, and the great cost incurred therein, even in, comparatively speaking, shallow mines. Where the chains are rubbing against the angles, and the loaded kibbles drawn over incline and irregular shafts, others knocking one against the other, and sometimes caught by hooks and tongs by a couple of men, and who allow at times some of the contents to fall back into the shaft, the cost exceeds 10s. per ton in small mines. I hope Capt. Tonkin and others will correct such a state of things, which is a disgrace to English mining in the present age of improvements. *A. B. Bristol.*

## THE CORNISH SYSTEM OF MINING.

SIR,—I believe were Cornishmen instructed how mines are economically and systematically wrought elsewhere, they would not be so backward in their system as they appear to be. Although two-thirds of the mines are kept going more for the sake of jobbing than for any expectation of profits from legitimate working, yet economical arrangements would enable many mines now working at a loss to pay cost, and thus prolong the explorations; therefore it is to the interest of Cornish miners to improve their system of mining. What is the Cornish Mining School doing? Your correspondent, "A. B.," Bristol, refers to the Bedminster collieries; if you permit me I shall refer to Shrooaks Colliery, Clumber. The shaft is 275 fathoms deep, and there are about 300 men employed below. The men go down and

come up daily in the cages, without the least inconvenience or accident. His Royal Highness the Prince of Wales, during his recent visit to Clumber, was invited to descend the colliery; indeed, His Royal Highness has visited many collieries. Such an inspection would not be thought of in Cornwall at the same depth. The agents and visitors think nothing of visiting the workings below at these collieries. I have been informed that the total cost of raising is not more than 6d. per ton. The works are kept in excellent order, and are under the management of Mr. C. Tylders Wright, F.G.S. *Nov. 14.* C. D.

## DRY ROT IN PIT TIMBERS.

SIR,—Some large oak sills, placed to form a foundation for an underground engine in a coal pit that I am acquainted with, have lately begun to decay; a white fungus shows itself on the timber, and rot soon sets in. The timber in question has been set only a month, in a dry place with plenty of air. In another coal pit some oak props at the roof of one of the gate-roads show the same appearance of fungus, and in course of a few weeks have rotted away. This was also in a dry place, and free circulation of air. Can anyone suggest a preservative? Gas-tar has failed. I never saw this sort of rot in the timber used in Cornish mines, and think, perhaps, the resin in the pine is a preservative. *A. J.*

## ANNULAR BORING BITS.

SIR,—These are by no means a new invention, as I have used many sorts years ago, not only to bore any sized hole in or through metals, but to cut out circles of wood of various circumferences, principally from 1 in. to 6 in. diameter, with the same tool, merely by screwing over an hollow mandrill a metal chuck, filled with concentric circles of sheet-steel, as close as the respective thicknesses of any series of thin plates will pack, and allow being suitably serrated around their outer edges; hence, whatever size circular cutter is screwed out more prominent than the other, so will an annular ring, of the depth projected, be formed in the substance impinging against the revolving mandrill, or the circular groove can be forced through, thereby leaving a round hole in the stationary surface, with the separated circle of wood or metal in the rotary tool to be pushed out by a small piston passing through the centre of the revolving cutters, &c. I have also a similar machine for sale, that can turn out 50,000 conical wood shives per day, leaving each parallel and fit for use during the same revolutions, &c.—*North Wales, Nov. 8.* G. F. GOBLE.

## FIRING GUNPOWDER BY COMPRESSED AIR.

SIR,—This is a mode tried by me many years ago, but I soon found it could not be satisfactorily applied to beneficial purposes; because it will be seen that although heat enough may be generated to fire many quick successive discharges, yet if the barrel is left duly primed for any length of time afterwards, the powder in the small touch-hole will get so damp from the residuum of the pre-decomposed air (in certain hygrometric states), that it will either hang fire or miss igniting. And if the communicating hole is too large, the air undergoing compression in the cylinder will be forced to escape through the charge unconfined; therefore, though the calorific scheme might appear palpable in theory, practice will soon condemn the general application of it for the purpose of dispensing with caps or other igniting contrivances; at least such is the idea of—*North Wales, Nov. 8.* G. F. GOBLE.

## SILICATE OF GOLD.

SIR,—This is a modern term, intended to be applied to certain silicious minerals, containing gold in a state of invisibility, for since science is non-plussed by so many analysts declaring they often detect the presence of gold in earths where not a microscopic shade of that metal could be discernible, no learned savant appears to attempt demonstrating whether such auriferous essentials were primarily diffused among the said matrices in the form of impalpable powders or golden solutions. If in any oxidized state the colour of the earths would depend in a great measure on the nature of the agent that engendered oxidation, at the same time such commixing of gold with earthy substances can only be classed as a mechanical combination of metal and mineral; therefore each can be again easily separated, because such metalliferous ingredients are seldom incorporated in the body of contingent minerals, but merely dispersed betwixt the interstices of certain crystals in a kind of smoky adhesion, as if liquid gold had been forced to volatilise and condense in such cavernous receptacles, like many other chemical residuum; therefore simple washing in nitro-muriatic acid will readily dissolve and retain every particle of such auriferous deposits, whereas crushing the slightly impregnated stones previous to immersion will only tend to absorb a great portion of the dissolving menstruum, without furnishing any additional aurum than what the outside of the solid stones supply. In some places certain crevices, when opened, will show real gilt surfaces, while other chasms will contain pure filaments, which was so well known to cayers on the Yuba, that prospectors there soon extracted large quantities by finding the rich metal in fissures only. To what extent similar ramifications of virgin gold may be discovered in Wales, Ireland, &c., time may soon unveil. On the other hand, if while silica was in any liquified mass, and a solution of gold mingled with it, such a chemical union would take place as to cause the auriferous mineral, when dry, to partake of the colour the diffused metal tinge, therefore, when stones are highly impregnated with golden hues, such minerals would probably be considered *golds* too rich to be crushed for the sake of their gilded pigments only; and where earths are only slightly charged with auriferous, such would not pay for dissolving *en masse*, merely to obtain their colouring matters.

If anyone will take the trouble and expense to dissolve some quartz, and intermix with it liquid gold, and then consolidate the amber-coloured compound, it would soon prove whether fluid silica and gold will crystallise as one, or whether any portion of the salts of gold will be forced to granulate, and so only remain mechanically associated with the hardened stone; for if silica and gold can be made to solidify in chemical union, then no doubt millions of tons of golden quartz may be found to pay for separation; but if the noble metal will not allow its nature to be contaminated by any such dirty connection, what constitute native silicates of gold? Then, again, if the chlorides of gold, tin, and silica are well mixed, the compound will appear of a purplish hue, but from the affinity that metals have for soluble silica, as well as from the dense nature of the dissolved stone, the purple of Cassius will not readily precipitate or allow being easily extracted to separate solidifications. Also, if into a solution of ordinary quartz nitrate of iron and gold are incorporated, these ingredients will, after its water of crystallisation is made to disappear, show similar reddish features as the crop stones of the Clogau, and many other gold mines analysed by—*Dolgelly, Nov. 12.* G. F. GOBLE.

## THE INVENTOR OF THE ELECTRIC TELEGRAPH.

SIR,—As a contribution to the History of Telegraphy, will you afford space for the following translation from a Madrid paper, published in 1790:—"The Prince of Peace, who testifies the most laudable zeal for the progress of the sciences, understanding that Dr. Don Francisco Salva had read at the Royal Academy of Sciences, at Barcelona, a memoir 'On the Application of Electricity to the Telegraph,' and presented at the same time an electrical telegraph of his own invention, requested to examine the apparatus himself. Satisfied with the exactness and celerity with which communications may be made by means of it, he introduced the Doctor to the King of Spain. The Prince of Peace afterwards, in the presence of their Majesties and the whole Court, made some communications by the telegraph completely to their satisfaction. The Infant Don Antonio proposes to have one of them on the most complete construction, which shall possess power sufficient to communicate between the greatest distances by land or sea. With this view His Highness has ordered the construction of a machine, the cylinder of which is more than 40 inches in diameter; and he intends, as soon as it is finished, to undertake a series of curious and useful experiments, in conjunction with Dr. Don Salva." *JAMES BRUCE.*

## THE ABUSED PATENT LAW.

SIR,—"Enough is as good as a feast," is a trite and true apothegm, and it is, no doubt, true that more than enough of patents is a thing prejudicial to the social economy—hence it comes to pass that the unnecessary and improper multiplication of patent grants causes many persons to look with disfavour upon the patent system generally, and leads to the oft-repeated attacks upon it, such as that which lately took place at the late meeting of the British Association, and has attracted so much public attention. Indeed, after making allowance for the ill-concealed "surroundings" of the various Anti-patent Law advocates, there still remains a pertinent problem, as to whether any patent system ought to be tolerated that does not provide in some practicable shape for testing whether any claim for a patent is legally correct. Many have been the calls for examiners or judges charged to enquire into the novelty and legal eligibility of the invention claimed to be patented, but these calls have been usually met by suggestions of doubts as to the success of any such system, and the examples of the United States and

Prussia are pointed to as showing the unsatisfactory action of boards of examiners and preliminary enquiries. It is, doubtless, a delicate question to handle, for any preliminary inquiry must of necessity be conducted under great difficulties, for inventions have their conception, their growth or development, and completion, like most things, and it cannot be said that the invention is in a fit state for full and fair adjudication till it is complete, which it scarcely ever can be at the time of application for letters patent, for until the patent is applied for and obtained, people do not feel themselves justified in giving to it that full publicity, and doing to that extent, which will ensure the perfection of the idea; and then the judgment has to be given upon half a case, so to speak; and must it be evident be very imperfect; and this view of the case will show the futility of any comparison being made with the action of the Privy Council, or other courts which are called upon to adjudicate in the matter of an invention that has passed through all stages, or nearly all stages, of growth, for then the Court may be said to have the whole case before them.

Again, the difficulty in preliminary examinations, equally with all other adjudications in technical matters of getting proper judges, has to be met; and since the subject matter in question is not unfrequently so far removed from all recognised data as to be almost contrariant, and beyond them, technical knowledge can be of little avail to the judges; and, further, the possession of this technical knowledge may often operate to warp or bias the judgment of the arbiters; and yet, if the judges have not this technical knowledge, they will be ill able to understand anything of the nature of what is brought before them; so that, in constructing a satisfactory Court of Examiners, one appears to be on the horns of a dilemma. But what shall we do? Must we suffer anyone and everyone, be he rightful claimant or mere pretender, to go forth to the public, with his patent in his hand, passing off his pseudo-inventions as legitimate patent rights, to the ultimate injury of genuine inventors, and the disgust of the public? I think not, for if we cannot do all that is required, we can yet do a great deal, and, as it appears to me, without material departing from laws and regulations at present existent. Let us have official indexes to patents, and abstracts of specifications so thoroughly and effectually classified that the searching into the novelty of an invention may be rendered tolerably facile; and give us a reading-room and library at the Patent Office, which shall leave us space to sit down in, and allow of the proper and efficient arrangements of the books and specifications being carried out, which the superintendent and his assistants are ready and able to effect, instead of as at present being crisscrossed and confined in a moderate sized room and narrow passage, so that inventors may be induced to search before patenting their inventions; and, to promote such search, let the Attorney and Solicitor-Generals require declarations from the applicants for patents upon proceeding therewith that they have made search, and still believe in the novelty of their inventions. And, further, let the opposition system be revised by cheapening and rendering more reasonable the process, on the mode and manner of effecting which I hope to say a few words hereafter.—*Strand, Nov. 7.* F. W. CAMPBELL.

## THE GEOLOGICAL FORMATION OF THE EARTH—No. VII.

SIR,—In my last I described three kinds of lodes. I will now take up the rock formation, reiterating my former statement—that I believe the interior of the earth to be largely charged with silica. Some will even say it is an acid, forming two-thirds of the whole earth; by Sir Humphry Davy it has been represented as a compound, possessing a peculiar principle of combustion when in combination with oxygen; and I have no doubt that, like all rocks, it becomes active when oxygen is in contact, even in the interior of the earth. The siliceous rock, combined with mica, felspar, lime, &c., or, if in distinct layers, on meeting oxygen will be continually generating gases. These gases ascend through lodes in the earth's crust to the ocean, which contains portions of all substances in solution; portions of which, from affinity and pressure, combining with what is brought up in gases, and a requisite quantity of water and oxygen, will crystallise and become fixed, and form a new layer of rock, quite distinct from the siliceous rocks below. These new rocks in forming undergo a special fermentation, emitting a new gas, which, again uniting with that continuing from below, forms the gas of another description of rock, in the formation of which the smallest change of proportions (say one-hundredth part) would be sufficient to alter its colour so much that the geologist would give it a new or different name. The gas of this new rock, combining with other gases, aided by the contents of the ocean, would form a second layer; and so it would go on in succession, forming different rocks, as long as the lower rocks continue to emit gas, or whilst the sea remains over them, which will facilitate the rock formation by adding to its necessary wants, and is a counteracting weight by its gravitation, confining the gases to the bottom for crystallisation about whatever is lying lifeless there, which becomes fossil.

Every rock has its own natural law of crystallisation. Some form nearly vertical, others horizontal; again are they to be found at every different angle, over which there appears to be no human control, but, like the trees, adhere to their own several laws. I believe all rocks to be formed in much the same position as now found, the only change I can detect are the faults before mentioned, occasioned by the growth and decay of rocks; this I hope to prove hereafter by diagrams to the public satisfaction. Some layers of rock may have risen a little more on their edges; by the expanding or contracting action of the siliceous rock below; but when we carefully scrutinise the up and down throws in nearly all the flat coal formations, also the moves of lodes in nearly all vertical rocks, we have no convincing proof of their being much altered from the original position, the edge or vertical rock is in conformity with the shift of lodes, proving that it could not have lifted since the lode was formed. To these points I would direct the reader's attention, being prepared to discuss them severally on the spot where the like is to be seen. If we are to suppose the different rocks were not formed in the manner I have stated, and as now found, I would ask how the metal and mineral substances are so well agreed as to settle down so compact altogether? I may be permitted to deal with coal first, remarking that as to its origin theorists are not agreed, some claiming for it timber-trees, whilst others maintain that it was peat-bogs. Those of the former opinion assert that the trees were washed down by the mountain torrent; and in support of this argument refer us to the mass of wood that already has and still is being washed down the mighty Amazon, and there becoming embedded with the sand accumulating at its mouth, which they say will ultimately prove a bed of coal. I say, never. The timber-trees lying indiscriminately over each other will continue to settle down, whilst the interstices are filled up with sand; the latter being in the greatest proportion. I unhesitatingly say all the pressure that could possibly be brought to bear on it would never cause the trees to form a compact mass of coal; all grained the same way, or free from the sand. In proof of this, I will refer to the trees found in the Irish bogs; are they not trees still? Again, look at them in Carion, Pentworth, and Charlestown streams, all worked deep under the rock, they having evidently been there since the Deluge; are they not still timber-trees? Yes; and will ever remain so, like the rocks, until they dissolve and pass away in solution, as the tin when it entered the elk's horn and re-formed.

To those supporting the latter argument I would say,—Bog-peat is a fertile vegetable, growing on the surface of the earth, in which are found more animals than in any other known substance. These infinitely minute insects partake largely of the powers of animation bestowed on the animal creation, although their existence is but short; they spring into life and die almost in a day, therefore the fertility of these bogs in both animal and vegetable matter can cause no surprise to the reflecting mind as to their nature. If bogs were drained to the bottom they would be found a close compact mass, which the theorists pronounce to be all but formed into coal; but I would remind your readers that bog-peat is not rock, neither can be found in it the cross-heads or faults, as in rock. The fact is the under portion has decayed, part of its contents having passed away to form a new substance, of which it is not unlikely a portion may have aided in the formation of coal beds. If these coal beds owe their origin to the decomposition or recombination of peat-bogs, how comes it so many of such beds are to be found many thousands of feet below the surface, overlaid by almost every description of rock, not omitting even the beds of iron ore? The elucidation of this mystery would be highly interesting, as I think strong arguments will be brought forward to prove how so many of these peat-bogs got there in succession. Theorists contend the first peat-bed to have been overgrown (whether from sea or land, they are not agreed), and that it afterwards became coal. To my shallow comprehension this argument is not very clear; if they can prove the overflowing of peat-bogs to have caused the same to become coal, it matters not from whence the water came. I will propose the following questions for general information:—1. On the day following this terrific inundation did the foul water settle down, forming the shale on the coal?—2. When did the water again become foul; and from whence came with it the siliceous sand that settled, forming the next layer of rock?—3. What could have assisted the sea to such an extent as to have covered the peat-beds inundated by inland deluges from different directions, to form so many layers? Subsequently, I presume, other inundations must, again and again, have taken place, in each instance bringing with it matter for settling, forming the successive layers that are now found. These warlike struggles must have continued for a lengthened period, as there appears to have been about twenty such overlayers formed, the most mysterious of which is that in the overlying formations a compact bed of ironstone is found, said by some of our celebrated school-teachers of the present day to have been placed there in a melting state; and to support these arguments submit the cinder-like formation found as a proof. Such extraordinary views are beyond my comprehension. Having expatiated on the first peat-bog transmutation, and its subsequent stratifications to the next coal bed (late peat-bog, of course), I am necessitated to ask what followed. Did the earth, so long submerged by the watery element, succeed in raising itself above the surface, that the seed of the struggling peat, so long engulfed, might force itself through all these layers, propagating a new peat-bed on the surface; which, when to perfection, was doomed for destruction by its formidable enemy, who, ever bent on mischief, would discharge its watery element, and place poor peat-bog again in the deep, overlying it, as before, with beds of rock, whilst Vulcan (as plutonians say) presume, we are to infer they intend to bind them down, and prevent them from ever rising, but struggled against his formidable foe, repeatedly raising its head above the surface, and forming new beds for destruction, until about fifty different layers of this peat-bog are said to have become the coal beds of the present day. How fortunate for man this supply of coals, enabling him to keep pace with the age in which he lives, providing means for contending with the birds of the air, the adverse storm, and the currents of the restless ocean. There are some croakers, having considerable regard for the future, crying out,—We are consuming the coals too fast, and that we should not export. How absurd!—If the theory of the schools be correct, we have nothing to fear, as neither peat-bog nor water have gained much ascendancy. It will be admitted that peat-bogs never presented a more promising appearance than at present; and should water again attack and overthrow them, I presume we may calculate on the pertinacious courage of the peat, as of yore. The bogs of Ireland alone will more than compensate our rising progeny for what has been taken away in England. Then, why grumble? Let the Irish have their turn next. Before turning my back on bog-peat, allow me to ask the would-be geologist for his solution of the following query:—What caused bog-peat to persist in sowing seed immediately over its former bed, continuing to do so fifty times in succession? Might not a situation have been selected where the mountains would have been a barrier to the destructive inundations, and peat not to be so easily become a martyr? Then, I would ask, where the water kept the different deposits, by which the peat was overlaid and stifled; if being in nearly every case of the same materials, in a succession of layers between every coal bed? Vulcan, in some instances, certainly appears to be short with his supply of iron; but, take it as a whole, it must be admitted to have been satisfactorily performed.

If we even suppose coal was formed from timber-trees, how came they all to settle down so nicely over each other? I may be told that water had command over the wind, and changed it so as to make a troubled sea in the direction it wanted, carrying the different materials in a puddle or agitated state to the spot where they were to settle down and form a new band; or it might have been that water possessed the magic power so prevalent in by-gone tales, or otherwise held the reins of the great magnetic power, by which it was enabled to convey the timber-trees and materials for these deposits to where they have so beautifully settled over each other in succession.

My observations refer to fifty coal layers. I shall introduce others, showing that wherever bog-peat attempted to rear its head the water attacked it. But, what is singular, the number of layers in the different districts do not correspond; from which, I presume, we are to infer that the water was not so frequent in some places, having in some instances succeeded in forming fifty beds of coal, and in others only three or four, over which the different layers are not of the same substance as in many other formations. Let the reader take up a geological section of a coal district, and see the different layers as formed, and ask himself how they were got there to cover the ill-used peat, and what caused it to be fifty times overgrown? And why peat should grow above water to form coal; and all the other layers formed sedimentary? Lastly, look at the



mountain masses, of a different siliceous rock to the underlayers collected and set down in the last struggle in South Wales to bind down post; where did that come from? And in some districts even the lime formation appears to be harrowed up to cover coal, whether formed from peat or trees. In my estimation, these views are all fabulous. I think there is not a sound practical man to be found in the world who would attempt to offer proofs bearing out the theory of coals having their origin either in timber-trees or peat-bogs.—Nov. 13.

NICHOLAS ENNOR.

## MINING IN SPAIN—THE BEARIZ MINE.

SIR,—In last week's Journal, I observe Mr. Gunther has commented on my remarks on the Beariz Tin Mine. It is to be hoped it will be a good thing under such able management. Still, it appears strange he could not carry it out without the aid of the Cornish miner. Why not have taken his own countrymen? Are they all bad "tinners," and not able to use the vanning shovel to detect the tin? I was authorised to visit the mine by a Spanish proprietor, and occupied three days in passing over the ground, having travelled, I should say, six or seven miles over the backs of the lodes on foot, crossing from one lode to the other, testing them as I went. Mr. Gunther must not imagine I was occupied these three days in this miserable district without having my eyes open. I know well where to find the tin; and if Cornishmen adopt the Scotchman's motto—"We want no Scots or Germans here," it will not be found now, from Mr. Gunther's own showing. I hope Mr. Gunther will meet a countryman, as they met me, with such observations as—"You are not wanted here;" and to raise the inhabitants of the district against their countryman, who could not speak a word of the language. But what better could be expected; every Englishman knows the Scotch system of conduct; but the rude manners and parsimonious habits of these men were beyond all I ever heard of. I may not ask, to how many Cornishmen has application been made for filling up the complement required in this expedition? They even wanted the agent to whom they applied to live on the Scotch porridge and other unpalatable fare, supplied on the truck system, which so disgusted him that he declined the appointment; I hope Mr. Gunther has not accepted it on such like terms. I have next to ask (Mr. Gunther) what means when speaking of "decomposed" stanniferous rock bands, and the harder lodes associated therewith? I fear I shall have to attend the German schools to learn to know tin, and Mr. Gunther's geological terms. In closing my observations on this subject, I have only to add that I saw nothing there but soft silvan lodes (not bands) containing tin, in the old clay-slate formations; and no lode harder than the strange beings I saw there were able to excavate with the turnspoke, which I tested, and found to contain from 6 lbs. to 7 lbs. of tin to the ton. I think Capt. Barrett states it to produce about the same.

Mr. Gunther may rest assured I was wide-awake when there, and saw no water to contend with, or candles required. I scrutinised it close enough to see the lodes dipped faster than the rock, and as fast as they sunk it fell in. To work it they will have to go to Portugal for timber. I was further informed that 12,000*l.* is said to have been paid for the mine, and 40,000*l.* in free shares. A nice bait for the Londoners. Well might the Scotchman, when I told him he did not know tin, slap his pocket, saying—"He knew how to line that."

For the guidance of Mr. Gunther, I may tell him that if nothing better than his "stanniferous bands" can be found in that locality, 30 lbs. of tin to the ton will not pay their working expenses; then, where is the 12,000*l.* to come from, and the 40,000*l.* of free shares? Mr. Gunther says these lodes are "decomposed bands." Will he tell me why he thinks them decomposed? And, if so, in what state were they before decomposition took place? Were his so-called bands formed with the tin in them when the world sprung into existence; or have these bands formed since, and the tin also? Did the tin and the quartz form at one and the same time, or at distinct periods? If he says the bands and the tin in them formed with the Creation, he would be establishing the law that where it was then it is now, proving the earth to be dead or inert. If it came there since, he must prove it grew and crystallised; then, I say, if he proves this rock or ore to have grown, it is growing now, and that all grow. Mr. Gunther may feel assured that to take the subject into his own hands, and to try to prove it, is to try to prove a definition, let us have it in plain English, quoting no opinions in Latin, Greek, or German; rather let him stand on his known practical facts that he can prove. I am rather out of place in having thrown out these hints, as my remarks are appearing weekly, but I am not the least timid as to the ground I stand on. I write this out of no disrespect to Mr. Gunther, only blaming him for going between me and the niggardly Scotchman, who, however, had candour enough to tell me "he knew how to line his pocket."—Nov. 12.

NICHOLAS ENNOR.

## MINING IN SPAIN—THE BEARIZ MINE.

SIR,—In the Journal of Oct. 12 I notice an article, written by Mr. Ennor, on the Beariz Tin-works, in Spain. As one who feels an interest in all legitimate undertakings, I beg leave, through your valuable Journal, to correct a few assertions in that letter. Knowing the geological position of that extensive and worthy sett, I feel I should not be doing the company nor your readers justice if I were to allow it to pass unnoticed; and I hope some one more able than myself, who understands the affair, has replied to it before this. For an idea of the position of the works, I cannot do better than refer your readers to the prospectus, which I find to be fairly and economically made out. First, Mr. Ennor describes the kaolin, or china-clay, to be just the same in composition as our Cornish clay. If so, are not the veins of kaolin, and the veins of tin, of the same nature? Experience teaches me they are; and not only tin, but copper and lead as well. This clay formation is situated in a north and south direction, at the foot of the granite into a stratum of micaceous slate, inclining east towards a valley of 1200 feet. The most westerly appears the main course, and the only one I find running so. There are several others, and all appear to be dropping into the main body, which is very likely to improve the production of the main course, and greatly add to its value. It will pay enormous profits, if we only take Mr. Ennor's own calculation, which is 7 lbs. of tin to the ton of stuff. Suppose only 70 men should be set to washing, each washing 10 tons of stuff a day, that would give 7000 lbs. of tin a day, or 140,000 lbs. a week, 1,260,000 lbs. a month, or 675 tons of tin per annum, at 60*l.* per ton, would be equal to 40,500*l.*; and, from what I see of the works, 150 men could after the works are properly laid open be set to work with equal results. Again, Mr. Ennor says there is no water on the hill for washing and dressing purposes. I would ask him if he visited that part of the sett about half a mile to the west of the present workings? I fancy not; or otherwise we should have heard in his letter of sufficient water for dressing and other purposes. Since the Beariz possesses such elements of success, who can say that it will not become equal to our best producing tin-works in Cornwall? I have never seen the object of Mr. Ennor's wrath but once, when I found him to be a civil and obliging person, and, perhaps, if Mr. Ennor had met with a warmer reception he would have been more liberal in his account of the works. My motive for replying to Mr. Ennor's letter is not through any personal interest in the undertaking, nor ill-feeling to the writer, but merely to show that the Beariz is truly bona fide. I wish the company every success, and Mr. Ennor a better reception on his next visit to Spain.

A CORNISH MINER IN NORTH SPAIN.

## THE SOURCE OF ENGLAND'S GREATNESS—MINERAL VEINS.

SIR,—It was not the coming of the Romans that improved Britain, but the arts and sciences they implanted in the minds of the people, directing them to a course of occupation, which they followed with energy and perseverance. The source of our Mineral Wealth was not neglected; and with the assistance of the metals Agriculture and Manufactures have advanced to their present perfection. Let us not, then, degenerate, but go forward in our glorious, still using, as discoveries in science allow, the best means available to raise up still more the human condition, and the progress of the human mind may continue to look at, and long to follow, the rapid advance of the Anglo-Saxon. But how is this to be continued, some may ask; are not the mines of our country becoming exhausted, and a coal basin may have its contents cleared out? But to obtain an increase of the metals, it is only to avail ourselves of all the scientific improvements that will lessen labour, and enable us to go a little deeper, when we shall be abundantly supplied. Therefore, let us but remember that the raw material, in accordance to the abundance of its supply, governs our position in the scale of nations; and our first care, then, should be to cherish every means that may open up a new avenue to the source of wealth that is to be found in the raw material, such as the growth of cotton wool, or in the bringing forth of the hidden treasures from mineral veins, for the opening of each producing mine is as a fresh spring to a river, adding a new source, giving and increasing the means of our present greatness; therefore, that which is of the first importance should receive our best attention. And all who, through experience and study, are enabled to give a guiding hand to the speculator, other than the old Cornish saying of "where it is, there it is," should do so, that rash investments may be avoided, as in the usual course of the human mind, as the sciences, it is found that certain causes under certain laws produce similar results.

Altho' it is impossible to determine the position of that we cannot see, yet if we follow the course which Nature points out we shall be tempted to adopt that proverb; for various as are the freaks of Nature, when guided by it we shall be less likely to go astray, for its study gives us the laws which govern our undertakings; consequently, although we cannot understand why such a deposit is here or there, it is for us to study, and have our judgment guided by the experience of the past, for we know that by comparison the practical man now, as of old, is often the surest and best judge of results to be obtained, while the theoretical and impractical generally goes wrong. Even as a man, as he has for ages past. Science admits the correctness of his views, and shows him laws, which, though unknown, have been his governing guide. The works of Art are insignificant when compared to Nature, on a grander scale, yet the laws which govern each are universally the same. And metals which in the furnace pass off in fumes are condensed in a due order, according to their weight, which is found to correspond according to the specific gravity of the metals in water; therefore, the result given in miniature by the furnace guides our judgment, and in the mineral veins passing through the crust of the earth we see the fumes or passages through which the fumes of minerals have found vent, or have been condensed in them, while arising from the light within the earth, and deposited in due order; the sulphur and arsenic being the lightest comes near to the surface, forming mounds or iron pyrites, and, as the old miner will have it, generally "rides a good horse"—that is, being separated in the laboratory of Nature from other minerals, you have but to follow down the course from which these fumes have arisen to come in succession to those minerals from which it has been separated, and in general in due order, according to their specific gravity, other minerals. For instance, a mineral vein might have iron pyrites near the surface, or on the back of a lode, as it is termed, and in due order in depth will be seen zinc, copper, and silver-lead, rich for silver at first, and then becoming poorer in depth, the lead being the heaviest its fumes have settled first, but the difference not being great readily combine, and are, as it were, amalgamated together; we also find silver mixed in small proportions in the minerals above.

This is a description of a mixed vein of minerals; and it is fortunate for the miner when he finds all the "keenly" gossans, &c., are dispensed with, so that he comes on the more valuable minerals, such as copper, lead, or tin, at or near the surface. But should it not be the case, the practical man will form the most correct view of the mineral he is to find in the spots and stains that he may see here or there throughout the back of a lode, or mineral vein, dispersed together with the iron pyrites. Exceptions there are, no doubt, to the igneous origin of mineral deposits; but the main source or origin of minerals in veins is principally to be traced to the fumes sent out from the molten mass within the earth's crust, such fumes being condensed on the walls or sides of the fissures made by convulsions of Nature, through which they are discharged, being in due time, after the cooling and subsidence of such convulsions, crystallised and arranged in proper order through chemical and electrical agency, the strength and power of such currents and influences being governed by the description of rock adjoining. Therefore one stratum is more congenial than another, and different neighbourhoods have their peculiar characteristics; for a hard rock that is productive in

one district would be unproductive in another, or the reverse. But still there seems to be a rule or governing power, and to galvanic action, produced and assisted by chemical agency, is the power given to transplant such fumes as were condensed, and to arrange and deposit all in due order. One description of strata provides one pole or side of the battery, and some other description produces the effect, such, for instance, as a hard and soft rock, sandstone and slate, or other variations. If such be the case, it must be evident the mineral fumes would be transplanted to that side or part of the vein to which the current of electricity tended, and possibly in some places be removed further away, according to the division or vein being with or across the strata; and here also we are brought in contact with another feature—alides, which are generally filled with a clayey substance, so much so that they frequently dam up the water in a neighbourhood, so that mines often work comparatively dry in their vicinity; and it is not at all unusual to find that what has been an obstacle to the water has also stopped the mineral current in its course, and large deposits are often, if not generally, found where mineral veins come in contact with other lodes or alides.

While we enjoy the fruits that minerals have borne to mankind, let us still follow their research with perseverance, as the employment of capital in mining meets, on the whole, an ample return. Yet those who devote their funds to the unfolding the hidden treasures of the earth too often meet with complete loss; therefore, any that can remove in part that uncertainty to one and all confers a benefit on society, as all such information tends to remove that odium which formerly rested on all and certain speculation. But let us not class that man whose disposition leads him to follow or encourage this noble pursuit with those who embrace shadowy schemes, and sometimes have only their own gratification and gain in view; let not such be compared to him who brings a blessing upon his fellow-creatures by affording employment, and uses those means which Creation has given us to unfold the hidden resources of the earth. But each may be successful or unfortunate in his way; each has his reward. The one who has sought an uncertain investment in a lottery, or in gambling, has wasted his means, and is as a child that finds amusement in a bubble, and sees all vanish away, but has no return; where is his reward? We all must look for some fruit for our labours, or else we shall be classed with the unprofitable servant, who hid his talent in a napkin. Such, then, are those who use not the means that are given them, but seek channels for their wealth where no good is known to result. But, I will ask, is there a more noble pursuit than Mining? For is it not the source of man's greatness; and are not the metals the great civilisers and improvers? Taken from this source, and what would remain? For while religion is the source of true happiness, let us not forget that mining and the mineral world have provided the means from which civilisation has sprung, and to that country where its resources are most abundantly developed we may look for the greatest prosperity.—Nov. 4.

AGUSTUS BASSETT.

## GREAT WEST SETON MINE.

SIR,—A company being in course of formation, under favourable circumstances, for purchasing and reworking this valuable mining property, I beg space in your next Journal for a few remarks as to the prospects of the mine. It is situated in a rich copper district, being a little to the west of the celebrated West Wheel Seton, embracing some of the same lodes, which are a continuation of rich deposits of copper for many miles in length. The main lode of the Great West Seton is considered to be the old Tolgus lode, and one of the rich lodes in West Wheel Seton; it is to be seen in the level for a great length, where it is found to be full 6 ft. wide, and producing large quantities of mounds, with yellow copper ore interspersed throughout. The shaft is sunk only 13 fms below the adit by former workers; the lode was cut into at this point nearly 6 ft., but the water being too fast for the small engine they had for pumping, they were in consequence obliged to abandon the mine. The component parts of this lode, at the bottom of the shaft, are soft spar and yellow copper ore, with scarcely any mounds in it. The facts are that no lode in the country can show better indications at so shallow a level, and it is fully expected by driving eastward in that level large deposits of copper will be discovered, it being rising ground in that direction. There are three other lodes seen in the adit level, inclining south towards this magnificent lode; one will fall into it at a depth of about 30 fms. The other two will form a junction with the main lode at a depth of about 50 fms. A limited outlay will bring the mine into a paying state; indeed, it is estimated that 5000*l.* will do all that is required, that a 30-in. cylinder steam-engine will be of sufficient power to prove the lodes to a considerable depth. The mine has been visited and inspected by a large number of mining agents, working miners, and other mining gentlemen, amongst whom was Mr. J. S. Phillips, in his last tour through the county, who, with all others, speaks in the highest terms as to the prospects of the lode. I would conclude my remarks by saying that there is a large tract of mineral ground in this district unworked, and capitalists would do well to pay attention to it. Attention is to be paid to Mr. Phillips's prospectus of the North Pool, where he states that 6,000,000*l.* of profit has been realised by an outlay of only 600,000*l.* And I ask, what district is paying so well, as regards mining?

JOHN SETMOUR.

## THE MINE DOCTOR.

SIR,—Your correspondents having had their fling at the "Bal Doctor," it is time to show that "much may be said on both sides," and that the latter has frequently as much right to complain as the miner. A certain sum is detained every month from the miner's pay, by the purse of the manager, providing medical attendance; and the surgeon adds to his pocket the sum of the sum as an absolute compensation for his services; whilst the miner, on the other hand, has a right to return to such attention as is deemed sufficient in the case of an ordinary patient. But it is remembered, however, that the uncertain avocations of a medical man prevent his duly attending the mine accounts and taking up the sums according to him monthly by agreement with the miners, and his money is in too many instances employed without his leave in the mine, or kept by the purse of manager and applied to his private use; a course of conduct which in either case is little less than criminal, and would elsewhere entail punishment. The miner ceases to work if pay is long delayed, and should, therefore, have some consideration for his doctor under similar circumstances. I mean such consideration as would lead to a prevention of the evil. The doctor is often called upon to work both night and day; and it is reasonable to expect him to consent cheerfully, after a harassing day's work, to a long night ride for a reward which is to be indefinitely deferred? It may be asked, why does not the mine surgeon insist upon prompt payment, or prosecute for the recovery of his dues? It will, however, be readily understood how impolitic such a course would in many cases prove. He is often compelled by general motives of prudence to bear the pains of hope deferred rather than dare the consequences of County Court notoriety. The miners are themselves to blame for the state of things they complain of, and may easily remedy it.

I am the exponent of nobody's opinions but my own, and many of my medical brethren may dissent from what I am about to suggest. The advantages of an association for provision against the contingencies of accident and disease cannot be gainsaid, but there seem to me to be fundamental errors of management. I am a thorough free-trader in this, as in other respects. For myself, in a matter so dear to me as my health, not even the tyranny of a majority in the club should make me submit myself to the care of a medical man in whom I had no confidence, still less allow my body to be experimented on by an inexperienced and uneducated pupil. What I advise is, that a fund, as now, be collected for securing medical attention for the sick and disabled miner; let him be free to choose his doctor for himself, and change when he pleases. On the other side, let a committee of the miners see that the fees are paid the doctor duly, and not be applied to other purposes, as at present. Moreover, let the doctor be remunerated according to the scale of charges allowed him by his private patients. Miners are not homeopathic takers of physic, nor are they slow to ask even more than requisite attention; and if the ordinary temperance or shilling a month be not sufficient, let more be levied to meet the just demand. Thus the miner would be satisfied, and the medical man promptly and fairly rewarded.

M.R.C.S.

## THE CLIMATE OF ENGLAND—THE WEATHER.

SIR,—My attention has been called to a review in the Journal of Oct. 5 of a work on the "Climate of England," by E. Shepherd. As I have been a close observer of the weather for several years past, you will, perhaps, do me the favour to insert a few remarks, which occurred to me whilst reading your article. I quite agree with the remark, that "to be able to know the meteorological character of each month will be a boon of great importance; but I am old enough to remember the *Times* newspaper making a similar remark with reference to a work by one Patrick Murphy. In fact, such was the rage for "Murphy's Almanack" that the shop of the publisher was crowded for days together by people anxious to obtain so valuable a work. But half a dozen years ago Murphy and his Almanack alike forgotten. Not having seen Mr. Shepherd's work, I am not in a position to make any remarks on its merits. The reviewer says, "Shepherd has left the old beaten path of changes of the moon, solar spots, &c., and diverts further into space," to wit, as far as Jupiter, and even Neptune. His meteoric theory is certainly a startling novelty. From the earliest ages comets have been considered the "harbingers of woe," war, famine, and pestilence have all in turn been laid to their charge. But it would now appear that the world has been doing great injustice to these "wanderers." Instead of messengers of evil, they will henceforth be regarded as ministers of peace and plenty. My humble opinion is, and has always been, that neither the moon, nor Jupiter, or Saturn, or any other celestial body, except the one great source of light and heat, the Sun, have any influence upon the weather, or seasons of the earth. With respect to comets influencing the weather, I consider Mr. Angelo, the French astronomer, settled that question. He compared the cometary and thermal observations throughout an entire century, and arrived at the conclusion that "there exists no foundation whatever for the popular opinion that the comets influence the seasons." The reviewer says that Mr. Shepherd's predictions for August and September were "fulfilled with remarkable accuracy." I think I could show that they were not so very accurate; but what about October, which was to have been so very wet and cold? A milder October is not in record in this country; every day the temperature was above the average. But I forget the "cometary perturbations." I would offer one suggestion, in conclusion. Of what use will Mr. Shepherd's "monthly journal" be to us if, when his predictions fail, he afterwards tells us the failure was owing to "cometary perturbations"?—Waterhampton.

JOHN THURTELL.

## GLAN-Y-PWLL SLATE AND SLAB COMPANY (LIMITED).

A deputation of the directors of this company have recently visited this quarry, and report as follows:—

"We in the first instance passed through Lord Palmerston's quarries, and two other quarries adjoining; this gave us an important insight into the stupendous workings of these large and profitable undertakings, but more especially into the nature of the rock they are producing, which enabled us to form a pretty correct idea as to the similarity of the slate rock laid open at Glan-y-Pwll, and we feel fully satisfied that the identity was clear and unmistakable, and that the same veins they are working upon run through our sett. On arriving at the top of the mountain we inspected the new opening, which is progressing as fast as the nature of the works will admit. Here we saw layers of fine blocks of slate rock, the colour good, and the quality unusually so for the depth. As soon as the cutting reaches the point where it is proposed to sink the shaft to the tunnel No. 1, it is proposed to open east and west on the vein, where there is little or no doubt but large blocks of slate rock may be raised for manufacture at a depth little below the present opening at the top of the mountain. We also visited both the tunnels at No. 1; the workmen are roughing up, and may probably reach the top by the time the cutting reaches the point for the shaft. At both levels we examined the character and quality of the rock, and found it similar to that we had seen at the other quarries. As the object of our visit was to consider the propriety and expediency of laying down and erecting machinery for carrying on the undertaking with vigour, we invited the following practical gentlemen to accompany us—Messrs. Williams, Edwards, Roberts, and Owen; and we had also the advantage of Mr. De Winton, the engineer. The result of this consultation was that the time had arrived when we should lay down the incline and erect a building of suitable dimensions to receive the machinery—three sawing and two planing machines, together with the necessary gear for driving the same; also to provide and fix an over-shot wheel of sufficient power (say) from 24 to 30 feet diameter, and 3 to 4 feet wide, to drive the machinery, and any further additions that may at any time be required. We have given instructions to furnish plans and estimates for the various works named. We have also instructed Mr. Spooner, the surveyor, to make a plan for the incline to unite with the Port Maadoc Tramway, for conveyance of slates to the port. We have also entered into an arrangement with Mr. John Edwards to take the management of our works, having received high testimonials of his practical qualifications and character. We trust these arrangements will be greatly to the advantage of the company."

## Meetings of Mining Companies.

## WEST BRYN GWIG MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, Crown-court, Threadneedle-street, on Wednesday.—Mr. F. S. HEMMING in the chair.

Mr. T. P. THOMAS (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed. The accounts showed—

Ten months' labour cost	£466 5 5
Secretary's salary	£2 10 0
Sundries	£1 11 7 = £490 7 0
Balance last audit	£38 12 7

Leaving debit balance £510 14 5

A statement of liabilities and assets to the end of Oct. showed a balance of the former of 162*l.* 8*s.* 8*d.* The report from the agent was read, as follows:—

Nov. 11.—We have driven the 65 west 60 yards from the whim-shaft, and discovered one small shoot of ore within about 25 yards to the shaft. We sunk a few yards upon its course, but found it doing no good downwards. Afterwards, we continued driving the level west, and met with a heady break in the measures, which has thrown the lode out of its proper course. It is now proposed to cross-cut northward and southward to seek for the lode, which may be expected to be productive west of the jumble of ground driven through. In the east end also we discovered a shoot of ore which made a very rapid dip; this was followed by sinking winzes; failing to lead it to any body, we suspended, as the water became troublesome.—JOHN LLOYD.

Mr. HATTERS said that there was not the least doubt that the lode they were cross-cutting for was the Bryn Gwig main lode, although it had not as yet been reached, they being at present in disordered ground. They had the services of the same manager as Bryn Gwig, who had been born in the district, and entertained a very high opinion of their property. There was one thing greatly in their favour, the lodes generally in the district making shallow. The channel of ground was precisely the same as in Bryn Gwig. The accounts and report were unanimously passed.

Mr. T. P. THOMAS said it would be better to make a call, and appoint a day for the next meeting, to be held in three months' time. A call of 3*l.* per share would be more than sufficient to carry them over the next quarter, and in case of a discovery leave sufficient for a still further development.

After some discussion, a call of 3*l.* per share was made, payable at the North and South Wales Bank, Holywell, or to the secretary.

The directors were re-elected, and a vote of thanks to the Chairman terminated the proceedings.

## SILVER RAKE MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, Crown-court, Threadneedle-street, on Wednesday.—Mr. F. COMBS in the chair.

Mr. T. P. THOMAS (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed. The statement of accounts showed—

Balance last audit	£455 7 3
Eleven months' labour cost	£269 7 10
Secretary's salary	£2 10 0
Sundries	£6 10 0 = £338 7 10

Leaving credit balance £116 9 5

A statement of assets and liabilities, to the end of October, showed a balance of the former of 81*l.* 8*s.* 2*d.* The agent's report was read, as follows:—

Nov. 8.—Hemming's shaft has been sunk to the depth of 50 yards on the Billins vein. The 50 yard level has been driven 39 yards on the vein, in very promising ground; 18 yards more driving east will reach the north and south vein, where I expect to take all the water for good depth, when the north and south veins are coming into the Billins vein. It has always been very rich, and so I hope and believe it will be in this part. The 50 yard level west has been driven 13½ yards all in the vein; the present forecast of this is in ore ground, and the appearance of the vein is very promising. My opinion is that this mine will make a rich one in a short time.—THOMAS PIERCE.

Mr. T. P. THOMAS said that the operations at present being carried on were for the purpose of development, although on an economical scale, while the appearances were of the most encouraging character, having opened out good ground, which could be let for stopping. Mr. HATTERS said that they had about 18 yards to drive to cut the vein, while at present they had about 2 tons of lead ready to return. He did not think there was any necessity at the present meeting to make a call, the expense of dressing and returning the lead being trifling.

Mr. F. Combs, F. Lankshar, and G. Hatters were appointed directors for the next three months. A vote of thanks to the Chairman terminated the proceedings.

## DRAKE WALLS MINING COMPANY.

A general meeting of shareholders was held at the company's offices, Winchester-buildings, Old Broad-street, on Tuesday.—Mr. W. J. DUNSFORD in the chair.

The notice convening the meeting having been read, the minutes of the last meeting were signed and confirmed. The accounts showed—

Balance last audit	£224 3 4
Tin sold	£741 12 1
Tungstate of soda sold	£125 6 2 = £991 1 7
Six months' labour cost	£7794 5 7
Sundries	£29 8 7
Interest, discount, &c.	£19 3 6 = £7842 17 5

Leaving credit balance £1248 4 2

To this balance is to be added 99*l.* 13*s.* 3*d.* for materials in store, making a credit balance to end of September of 1347*l.* 17*s.* 5*d.* The agent's report was read, as follows:—

Nov. 9.—Matthew's Shaft: The 102, east of shaft, has been extended since last meeting 12 fms. 2 ft. 5 in., and the branches have produced small quantities of tin; some 6 fathoms behind the end we had an improvement, but in consequence of meeting with hard capel crossing the end, it has disordered the branches at present, which are of less value now, producing good stones of tin, and promising for an improvement. A rise has been communicated from the 102 with the 92, and good ventilation secured, and we have now four stopes working in the back of the 102 east, by 24 men, in tin ground worth 6*l.* per fathom. The 92, east of Matthew's shaft, has been extended 6 fms. 10 in. in tin ground worth 6*l.* per fathom. We have 12 men stopping in the back of this level in tin ground worth 5*l.* per fathom. The 80 east has been extended 2 fms. 1 ft. 4 in., the branches being unproductive; we removed the men from this end, and placed them to assist in sinking a winze below the 92; we have again resumed the driving of this end, and the branches are producing stones of tin. In the 70, east of Matthew's shaft, the men have been put to drive south through the south branches, referred to in our former report, but at the present time it will not pay for working, and is suspended. The 39, or Tye level, east of Matthew's shaft, has been extended 10 fms. 1 ft. 7 in.; the branches being worth on an average 7*l.* per fathom. A rise has been put up in the back of this, on a cross-course, 4½ fms. of which are opening up profitable tin ground. We have one stope, east of rise, set to eight men, the branches being worth about 5*l.* per fathom. Pearce's winze has been communicated from the Tye to the 40, which has laid open upwards of 3150 fms. of tin, and which will take some years to stope away.—Bettley's Shaft: The 80, west of this shaft, has been extended 11 fms. 1 ft. 2 in.; the branches have been changeable, the last 3 fms. have much improved, being worth fall 10*l.* per fathom; we have 12 men stopping in the back of this level in profitable tin ground. We have driven through 30 fms. of tiny ground in this level, from Bettley's shaft to Harris's winze, which we calculate will now stope at a profit.—Brenton's Shaft: The 70, west of Brenton's shaft, is rather harder for driving, the branches are more promising, and will produce 5*l.* worth of tin per fathom. The 60, west of Brenton's shaft, has been extended 12 fms. 0 ft. 2 in.; the branches have gradually improved, and are worth 18*l.* per fathom. We have eight men stopping below this level in tin ground worth 8*l.* per fathom, the ground being hard for back stopes, we have effected a saving of 15*l.* per fathom, by the present method of working this ground. The 50, west of Brenton's shaft, has been extended 15 fms. 5 ft. 11 in.; the branches throughout this drive being worth on an average 10*l.* per fathom; there are eight men stopping below this level in tin ground worth 10*l.* per fathom. In the 40, west of Brenton's shaft, a cross-cut has been put out north and south 2 fms. 3 ft. 8 in., and some good branches of tin discovered; we have, consequently, resumed the driving of the 40 west, and the branches are producing good work for tin, but we have not opened sufficiently on them to form a correct view. From the good indications in this level, with whole ground to surface, we may fairly estimate a very valuable piece of tin ground laid open, and which will take years to stope away; there are six men stopping below the 40, in profitable tin ground. We have eight men stopping in the back of the 40 in good tin ground, worth 12*l.* per fathom. On the north lode the 70 west has been extended 12 fms. 1 ft. on the course of the lode, which is from 2 to 3 feet wide, composed of quartz, mounds, and stones of ore, and at times worth 14 tons of ore per fathom. In the present end it produces stones of copper ore. On reference to the settling list you will observe we are driving ten levels by 44 men, several of which are laying open profitable tin ground. We beg to congratulate the shareholders on the improved prospects of the mine, particularly the western part thereof, which holds out every appearance of being permanently productive for a great length of time. We enclose statement of tinstuff drawn throughout the mine for six months ending with Sept. 1860, and the corresponding six months ending with Sept. 1861, showing we have drawn less in quantity for the period ending with Sept. 1861; but it is satisfactory to state the sales of tin have increased on the past six months 40 tons 14 cwt., or nearly 7 tons per month, which of itself is the best proof of the state of the mine; and with such extent of tin ground being laid open in the western part of the mine, we hope to do credit to ourselves, and give dividends to the shareholders. There are 366 persons employed in and on the mine.—T. GREGORY, J. HOSKIN.

The CHAIRMAN, in moving the adoption of the accounts and report, stated that it was only in accordance with the usual course that sunshine should follow gloom, and he was happy to say that as regarded Drake Walls this was the case—the report now laid before the shareholders being a very good one, while by the accounts they would see that above 1000*l.* profit had been realised since the last meeting; this was in a great measure from the western ground, into which they were driving five levels, and for an extent of 200 fms., that being to the boundary in this direction, the ground is whole to surface; this portion of their sett was formerly West Drake Walls, and had been recently added to their grant. With respect to their mode of working this portion of the property in conjunction with the old workings there had been some slight difference of opinion amongst the committee. Mr. Bayly thinking that it would be better to proceed at once in sinking Bettley's shaft to prove the veins under the bottom levels, while he (Mr. Dunsford) thought it was almost time that the shareholders should receive some returns for their capital expended; this, he thought, could be obtained by their present mode of working, and also by the 102 prove the mine to that depth. Should the western ground prove as anticipated, they could then incur an increased expenditure out of the profits. Mr. Bayly had waived his objections, and the committee had resolved in pushing on the western levels with all speed. With regard to the pecuniations of tin referred to at the last meeting, 5*l.* reward had been offered, detectives employed, but to the present time without any result, although Mr. Bayly still believed that the system was carried on; all he could say was that if they were robbed the thieves were very clever ones. The only other point he had to refer to was the renewal of the lease. He was glad to say that they had obtained a renewal for 21 years on very favourable terms, as well as a grant of the West Drake Walls sett.

Mr. FARM WARRIOR was glad to hear so good an account from the mine, especially as he was one of the old shareholders, and saw some chance of a return for the capital expended. He, however, wished to arrive at this as speedily as possible, and would, therefore, ask Capt. Gregory whether it would not be better at once to sink Brenton's engine-shaft, as that would prove the mine much more certainly.



conversant with tin mining than himself. A perusal of the reports in the *Mining Journal* always left him in doubt as to where the tin was to come from, yet from the sales they found the quantity steadily increasing. Their present discoveries were equal to 20000, per month, while they were not taking away more 18000, during the like period.

Capt. GREGORY explained their present workings, by means of a working plan of the mine. He proposed so soon as the 102 was sufficiently extended to sink Brenton's shaft to intersect it. The five western ends are the best that he had ever seen in the mine, and he believed that the western set was a valuable piece of unexplored ground. Mr. HATLEY said that his reason for wishing Bentley's engine-shaft to be sunk was that during the whole of their workings they had found the tin to make in veins dipping from west to east. Between these veins there had been hard floors of ground, similar to that in the bottom of the shaft. They had always found that when they had got through these floors good ore had been met with, and he fully believed it would prove so in this instance in a few fms. further sinking, besides which the principal part of their machinery was erected at this shaft, and it would be a work of considerable trouble and expense to make it available at Brenton's shaft.

Mr. P. WATSON enquired if Brenton's shaft was clear?—Capt. GREGORY: Yes. The CHAIRMAN said that the discussion had ventilated the question which had been under the consideration of the committee for some months; if they had decided to sink the two shafts, shareholders would have to forego any returns for some time. By their present workings they would develop the mine; besides which, they were bound by a covenant in the new lease to sink a shaft on the copper lode. The western ground would open up more ground than could be stopped away in a lifetime.

Mr. HALSTED wished for some explanation as to the sum of ten guineas charged in the accounts for inspecting the mine.

The CHAIRMAN stated that five guineas of that sum was for an inspection some eighteen months ago, but the report he had not seen.

Mr. HALSTED thought it hardly fair that the company should be charged for a private inspection.—The CHAIRMAN said that the matter referred to was previous to his joining the committee.

It was resolved that the conditions of the new lease offered by the Duchy be accepted, and the solicitors of the company be requested to try and obtain an extension of the time to commence sinking the new shaft; and that a vote of confidence be given to Captain Gregory and the officers of the company.

The committee were re-elected, and a cordial vote of thanks to the Chairman, committee, and agents terminated the proceedings.

#### NORTH MINERA MINING COMPANY.

A general meeting of shareholders was held at the company's office, Crown-court, Threadneedle-street, on Tuesday.—Mr. T. LANKSHEAR in the chair.

Mr. C. W. W. THOMAS (the secretary) read the notice convening the meeting, and the minutes of the last were confirmed. The accounts showed—

Balance last audit .....	£ 7 16 5
Ore sold .....	1247 15 3
Received on account of calls .....	26 5 0 = £1281 16 8
Three months' labour cost .....	£1061 13 6
Loan, T. P. Thomas .....	110 17 3
Merchants' bills, &c. ....	85 18 8 = 1258 9 5

Leaving credit balance .....

£28 7 3

The amount of lead broken and at surface is estimated at 5000.

Mr. T. P. THOMAS congratulated the shareholders on the present appearance of the mine, it looking better than at any previous time. The two shafts were being pushed on with all possible speed. The engine-shaft is coming into the same channel of ground as the main lode is embedded in, looking very kindly, and better than for some months past. In the eastern shaft they were almost through the thick bed of shale, the lode producing good stones of lead. Although still in the shale, the ground was precisely similar to that gone through in Charles's shaft, where they had a leader of lead 2 ft. solid. There were for the past two months had only been 10 tons, instead of 100 tons, as promised. In consequence of the breakage of machinery and large falls of ground from the back of the flap, which made it necessary to make a new roadway, so as to enable the men to resume work without danger. He was happy to say this work was accomplished, and they calculated to break at least 42 tons of ore during the next month, and at the same time complete the work necessary to make a lasting mine. The returns for the future would be increased, as until the last week they had not touched either of the rich deposits of ore. He fully believed that they would be able to return 3000, per month, and most congratulate the shareholders on the prospects, thinking that the present appearance warranted him in saying that they would receive at least 20 per cent. for their outlay during the coming year, for two such courses of ore could not be matched in the three kingdoms, except at Miners.

The accounts and report were passed, and a vote of thanks to the Chairman terminated the proceedings.

#### BILLINS MINING COMPANY.

A general meeting of shareholders was held at the company's office, Crown-court, Threadneedle-street, on Thursday.—Mr. G. BATTENS in the chair.

Mr. T. P. THOMAS (the secretary) read the notice convening the meeting. The statement of accounts was read, showing—

Balance .....	£4000 0 0
Purchase of sett .....	£3000 0 0
Four months' labour cost .....	282 17 1
Paid for extension of sett .....	250 0 0 = 3552 17 1

Leaving credit balance .....

£ 467 2 11

The statement of assets and liabilities showed a balance of the former of £411. 15s. 5d. The agent's report was read, as follows:—

Nov. 12.—Since the commencement of operations, we have made every possible effort to reach the bottom of the old works in the west end of the sett, and this, I am glad to say, we succeeded in doing, and found a broad and easily-worked lode going downwards between well-defined walls. In the lowest winze is a strong course of ore left by the ancient workers, and which is well worth 3 tons per fathom, in the bottom of the said winze, beside two ends of stops of grey ground (eastward and westward) as well as some fathoms of backs above the level (drift) to the winze. After accomplishing to see these lowest ends worked, we found to our great sorrow there was no possible means of working them in their present state to any advantage, because of the endless and unnecessary costs of drawing, wheeling, &c., from one winze to another, as was carried on by the former workers—better described on the accompanying section; and also, the ventilation being so bad that a candle could not be kept alight. Now it is proposed, and being done, to take the small shaft down to the 38, and set the ladders, &c., in it for working; this piece of work will be finished in a few weeks, and will, besides, well ventilate the bottom workings. Afterwards to sink the whim-shaft, which is already 38 fms. deep, 15 fms. deeper, and then cross-cut into the lode, so as to get good stops of ore deep to work upon. In the east end we have sunk the main-shaft 40 fathoms, and have cased it to that depth for drawing and working. It is intended now to open part of this level which has fallen down to the west, where we expect to meet shortly with good tribute pitches. Also, this shaft is to be continued downwards for a main trunk level, as proposed in my former report, as we can conveniently do. In this part, east of the sett, the former grant was very narrow in its limits, and after consulting some of the principal proprietors, and at their urgent request I have treated for some small setts that were lying south-east of the former grant; these, together with an additional circle around their limited boundaries, I have secured to the Billins Company—a large piece of running ground that will add greatly to the value of the property, as there are two, if not more, east and west lodes running through the same, which can be easily reached by a cross-cut from the main works.—J. LLOYD.

Mr. T. P. THOMAS said that the sett was held under a lease-note for three years, with the understanding that a lease would be granted for 21 years, making the whole of their term equal to 24 years. The terms had been definitely settled upon what he considered for the shareholders most advantageous terms, the royalty being but 17. per ton.

The CHAIRMAN stated that he had the mine inspected by Capt. Hancock, of Wheal Wrey, who had given a good report of their property, believing it to be no speculation, but merely a matter of time in getting the shaft down and driving the level to come under the ore ground. Previous to the present company coming into possession of the property, it had been worked by a few Welsh miners, who had acted on the principle of stopes as much as they could without going to any expense for machinery; the consequence was that in the bottom the air was so bad that the men could not work, and until the level was driven and winze put up the ore discovered was of no use to them. He (Mr. Batters) expected that in about six weeks the shaft would be down to the required depth, when the level would at once be driven to get under the ore ground. Their sett immediately adjoins the celebrated Parys Mine, where they are at present working on a flat of lead ore, dipping into their ground, and from which a very large profit was being derived by the Parys Mine shareholders.

The accounts and report were received and passed, and Messrs. F. S. Hemming, F. Combs, and G. Batters elected directors.

A vote of thanks to the Chairman terminated the proceedings.

#### COPIAPO MINING COMPANY.

An ordinary general meeting of shareholders was held at the company's office, New Broad-street, yesterday.—Mr. J. LABOUCHERE in the chair.

Mr. E. J. COLE (the secretary) read the advertisement convening the meeting, and the minutes of the last were read and confirmed.

The report of the directors was read, as follows:—

The directors beg to place before the shareholders the audited accounts for the year ending the 30th June last.

The workings during that period at the copper mines have not been attended with that success which the directors had reason to expect from the extended operations authorised to be carried on under the superintendence of the agent recently sent from Cornwall. The works at the Checo Mine, as the shareholders were informed at the meeting held in July last, had been vigorously prosecuted for several months with a very large force, and no discovery having been made, the directors decided upon discontinuing the large expenditure, more especially since the reports held out no encouraging feature.

The directors regret to say that the loss incurred between January and June amounted to £20,637-82. The workings are now, however, being conducted with a small force, and the advice from the manager lead to the expectation that no loss will hereafter be sustained, and that the operations under the new system may lead to a discovery of some importance. The Dolciana Mine has been worked on a small scale, but as yet no satisfactory result has been derived. The manager, however, considers that the operations should be continued, as the indications have recently been more favourable than for some time past.

The Alfn Hallada silver mine has left a profit of £847. 5s. on the 2½ barres held by this company, and the prospects continue favourable. The Republicano Silver Mine remains without alteration. Regarding the landed estates of company, it will be seen that the profit thereon for the year has amounted to the sum of £5577. 9s., which is fully equal to the statements the directors had previously made, and they expect that the year ending June next will prove equally favourable.

Respecting the value of the landed property of the company, it will be satisfactory to the shareholders to know that the Potters Seco estate is estimated by the manager to be worth the sum of £400,000, and it is the general opinion of those fully competent to judge that its value will still improve very considerably, especially should a railway, which has been in contemplation through the Horlito, be carried into effect at some future time. The profit and loss account shows a credit balance of the sum of £2790. 2s. 6d., which the directors leave to this meeting to appropriate either as a dividend, or to carry forward to the next account.

At the last annual meeting the amount of the loan due by the company stood at £5500. This sum has been paid, as well as a dividend of £2500. Two of the directors—Mr. John Labouchere and Mr. George Bowness Carr—retire by rotation, and are eligible for re-election. The auditors also retire, and are eligible for re-election.

The CHAIRMAN, in moving the adoption of the report, said that had it not been for

the unfortunate loss attending the operations at the Checo Copper Mine, the profit for the past year would have been highly satisfactory, inasmuch as there had been a profit from the company's estates of £2700. Shareholders were aware that the expenditure upon the Checo Mine was now limited to 1000, per month, but it was hoped it would soon meet its expenses, if not produce profits, and then there would remain the income from the estates, as well as the profit from the silver mines, for future division amongst the proprietors. He might inform proprietors that the directors had determined not to carry on any unproductive operations. By the report it would be seen there was an amount of £7900, available for division, but whether it should be so appropriated, or carried to the credit of the next account, was a matter which shareholders must determine.

The SECRETARY, in answer to a question, stated that the advice lately received spoke of the company's landed estates as being a valuable property, and as likely to materially improve in value.

Mr. WHEELWRIGHT said it appeared to have been recently discovered that the working in depth, which was pursued in Checo, was not applicable in Tres Puntas. As regarded Alfn Hallada, they had sunk deep to find the vein. They knew it was there, and, therefore, were now running horizontal excavations, so as to meet with the vein. The whole province of Tres Puntas was considerably improving.

Mr. TIMLEY said the Alfn Hallada had produced large returns, and it seemed to be probable it would do so again.

Mr. WHEELWRIGHT said that opinion was generally entertained by the holders who lived in the district—they all had a strong conviction they would again reach the vein. The report having been received and adopted, and the accounts passed and allowed, a discussion ensued upon the propriety of declaring a dividend, when it was agreed that the amount available for dividend should be carried to the credit of the next account. Messrs. Labouchere and Carr, the retiring directors, were then unanimously re-elected, Messrs. Watkins and Moore being appointed auditors.

Upon the proposition of Mr. TIMLEY, a unanimous vote of thanks to the Chairman and directors was passed, when the proceedings terminated.

#### THE MINERAL RESOURCES OF CARDIGANSHIRE.

[FROM OUR OWN REPORTER.]

On Saturday last a deputation of gentlemen connected with the mines of Cardiganshire left London for the purpose of meeting the landholders, mining engineers, and others interested in the promotion of that branch of industry in that rich but hitherto partially-known district, the object being to collect data upon the spot, and for testing the accuracy of all information previously gathered upon the subject. The region of the mines was approached by way of Llanidloes, which, although not directly in the county of Cardiganshire, still presented to the travellers the first unmistakable indications that they had arrived in a mining country. Llanidloes is situated on the eastern side of the great slope from the range of the Plynlimon Mountains, and is evidently a continuation of the slate formation in which the Cardiganshire mines are found, the metals and veins bearing a perfect identity to those of the neighbouring county. We had followed up by means of a railway the beautiful River Severn, from Shrewsbury to the present Welsh terminus at Llanidloes, and were delighted with the glimpses of mountain, woodland, and river scenery with which the district abounds. For the convenience, comfort, and economy of those who in future years propose visiting these mountain lands, it may be satisfactory to hear that it is proposed to extend this line of railway through Cardiganshire—indeed, there are already works in progress for this purpose; but at this point we, less fortunate, were unwillingly compelled to resort to the older and less rapid process of locomotion, known in the days of yore as "posting." Continuing to rise till we reached the gorge or pass of Plynlimon, we arrived at the western slope of this "mother of rivers," some 1700 ft. above the level of the sea. From this point, called Steddfigerig—which, although not learned in Celtic, we believe to mean "rocky seat of the bards"—we descended for a distance of 17 miles, at a declination of something like 100 ft. in a mile, when we reached the worthily renowned watering-place of Aberystwith.

There having of late been some discussion in the *Journal* upon the geological structure of this district, it may, perhaps, be expected that we should briefly give the result of our own observations. We approach this question with some degree of hesitancy, from the fact that there appears to exist a diversity of opinion with regard to some of its less important details, but at the same time feel assured that whatever remarks we may make, our readers will give us credit for endeavouring to convey an impartial view of the subject. Premising thus much, we may state that the highest mountains through this country, taking the line from the summit of Plynlimon to that of Cader Idris, runs in a direction of 14° to the west of due north, the mineral ground descending in a sort of rolling country from this range towards the sea, for a distance of about 10 miles, the smaller hills or undulations running more or less parallel with the main chain. We would not have it understood that we ascribe the elevation of these mighty eminences more to the handiwork of Pluto than to that of Neptune, or to Neptune than that of Pluto; but at the same time it is an incontrovertible fact that, as we approach the dominions of the Sea God, for the last seven miles the traces of mining are, "like angels' visits, few and far between." We certainly observed that the beds of slate near Aberystwith were less cemented and more arenaceous than in the mining districts, and that the building stone there is of a brick-like character, formed in layers of 3 in. or 4 in. in thickness, showing the metal-producing rock to be apparently distinct in its quality from that of the non-metallic rock. It was also observable that the mines increased in number as we approached the verge of the bearing ground towards the sea, but whether this is owing to the fact of the situation being more favourable for mining, or whether it is owing to some geological law, must be left to others to determine.

From the contented bearing of the industrial population, it is evident that mining has been the source of great benefit, the houses of the labouring classes possessing all the comforts and conveniences that could be desired. This is strikingly exemplified in the village of Goginan, which is situated on the side of a hill between Llanidloes and Aberystwith, and, about seven miles from the latter place, presents all the features of a prosperous mining hamlet. We were informed this place owes its origin to the resumption of operations at the Old Goginan Mine. Goginan now contains no less than 1000 inhabitants, many of whom, by their frugality, have succeeded in becoming possessors of the houses which they occupy. The scenery about this spot is remarkable for its wild grandeur and beauty, no less than for its rich historical associations, the district having been explored for silver-lead at least from the time of the Romans. If evidence were wanted to substantiate this fact, it would be attested by the remains of a Roman encampment, which are still standing on the summit of the hill, and the antiquity of its mineral worth is borne out by the name of the brook, which is called Nant-yr-arian (or the "Brook of Silver"), the waters of which are now diverted, being brought by channels carved upwards of 700 feet in the face of the Pen-craig-du (or the "Black Rock"), for the purpose of driving the machinery of the different mines. While at Goginan we visited the mine of that name. The date of the commencement of the modern operations (1842) we found inscribed on the keystone of the arch of the inclined plane leading into the interior workings. The operations extend along the surface for a distance of half a mile, the hill rising from the valley at the first step to a height of 360 feet, at which altitude the lode is seen cropping out at surface. An ancient adit, said to have been commenced by Bushell, the poet, is brought into the mine from the valley below, on the course of the vein. We were informed that 240,000 worth of lead and silver had been extracted from this vein above this excavation. The shafts are now sunk at least 400 to 500 feet deeper than the adit, from which depth ore of an excellent quality is being produced; this is a practical proof that the veins of this country maintain their productiveness to an unascertained depth. The machinery on the mine is at once powerful and efficient, possessing all modern appliances for carrying on the operations of an extensive mine. As already stated, the modern operations at Goginan were commenced about 20 years since, and although at that time there was expended upon it a capital of only 5000, we learnt that it had produced as much as 90000, a year profit.

Immediately to the north of Goginan is situated the well-known rich mine of Cwm Erfin, which, upon a comparatively small expenditure, has produced, and is still producing, large annual profits. To the north of Cwm Erfin stands the great Cwm Symlog-lode, which has obtained no small notoriety from the fact of its having yielded to Sir Hugh Myddleton an annual profit of 25,000, by which he was enabled to construct the works for bringing the New River to London. As some difference of opinion has been expressed as to which mine enabled this great engineer to do this work, some claiming one mine and some another, we took the trouble to ascertain the fact, and it may be taken for granted that our information upon this point cannot be gainsaid.

The next vein to the north is the highly argentiferous vein of Darren—one of the most ancient, extensive, and famous in the county of Cardigan.

Now turning our attention to the south, we reach the Tyllwyd Mine, which belongs to the same landlord as the Cwm Erfin—Mr. Wm. Jones, who by his liberality has largely contributed to the advancement of mining in this district. This mine is situated in the valley of the Rheidol. The lode in the hill has been extensively wrought by means of adit levels, but it has yet to be worked below the level of the valley. On the south side of the valley of the Rheidol is situated a mine known as Aberystwith,

which has an excellent lode, and is producing a good yield of ore with profits. The next mines to the south, on the great champion lode of the Nantnos Mines, stand the Silver Bank and the West Silver Bank, the turnpike-road from Aberystwith to the Devil's Bridge passing through them at about the ninth milestone. Taking into consideration that still further south are situated the Frongoch and other great mines, which are producing large annual profits from deep workings, it is but fair to argue that Silver Bank and West Silver Bank will soon prove to be successful and lucrative mining enterprises.

On Monday the deputation left Aberystwith for the purpose of visiting the West Silver Bank and other mines. We soon found ourselves at a considerable elevation, beholding a very fine view of Aberystwith, apparently standing forth in the sea like a miniature Venice, while beneath our feet lay the ancient village and church of Llanbadarn, and an extensive prospect of the River Rheidol. At this point the road is 300 or 400 feet above the level of the sea, and continues to ascend until it attains a height of about 1000 ft., when it is crossed by the metal-bearing rocks. At about the ninth milestone we arrived at the West Silver Bank, which is only a few feet from the high road. From this point a most commanding view of the surrounding country is obtained, the marked scene in the picture being Glan Rheidol, the seat of Mr. Bonsell, a descendant of Sir Thomas Bonsell, who amassed an immense fortune from the mines in the surrounding locality. In the selection of such a spot, so peculiarly favoured by Nature, and so admirably adapted for ornamental landscape, Sir Thomas displayed the most exquisite taste. It may well be said, with Tennyson, that—

"A thing of beauty is a joy for ever."

At the property of the West Silver Bank we found a shaft sinking in a good course of ore, and a large quantity of mineral being produced before a considerable distance along the surface. It was evident to the most unpractised eye that this was a great discovery. All expressed themselves, whether practical miners or otherwise, in terms of the most unqualified admiration at such an unexpectedly successful result at really the surface itself. The outcrop of the lode being on the slope of the hill, with a considerable valley to the north, every facility is afforded for an economical development. The bottom of the valley forms the bed of a brook, the water of which can easily be diverted to a site on which to erect machinery conveniently commanding all the operations at the mine.

We observed by the needle that to the south this vein had a lateral companion in the great and well-known Frongoch lode, which for thirty years past has been throwing up such treasures and profit to the proprietors. Still further south lies Grogwinion lode, which contributed to swell the fortune of Sir Thomas Bonsell, and is still yielding excellent profits. Further southward lies the celebrated Logylas vein, which is also very rich, and approached by an adit 60 fathoms deep, which we heard had taken forty years to drive. Following in the same direction are the Penygist, Glogfach, Esgairwyn, and Bryn Hope Mines; in the latter of which a valuable discovery has been made within the past few days. We noticed upon the Ordnance Map that Goginan, Darren, Penycenon, and the Talybont Mines, are situated in the same line; showing that Nature, by her wise laws, so arranged these deposits of ore that their position might be readily comprehended by the mind of man. Attention may here be called to the fact that the West Silver Bank lies in the channel of rock that has produced all these great mines; and, consequently, it is not surprising that large masses of ore should there be found.

As the directors of the West Silver Bank Company formed a part of the deputation—Messrs. Cotterell, Cockcroft, Nunn, and Milsted—some discussion ensued as to the future operations, which resulted in the unanimous determination that the engine-shaft should be sunk with all possible dispatch, and an adit level driven; the most confident opinions being expressed that success cannot but attend the development of a property so eminently favoured both by position as well as by the indications presented. With the usual ceremonial, amid the hearty cheers of the miners, Mr. Cotterell (the Chairman of the company) christened the shaft after his own name, the adit taking the name of the deputy-chairman, Mr. Cockcroft, while the lode will be called the Nunn Lode. It was decided to erect a water-wheel on the mine for the purpose of carrying out the operations forthwith.

All the arrangements in connection with the West Silver Bank having thus been satisfactorily completed, the deputation proceeded by the grand mountain road to the far-famed Devil's Bridge, again passing through magnificent scenery, the prospect from the bridge itself being such that the most perfect specimen of word-painting would convey but a very inadequate idea either of its grandeur or beauty. The chasm, between 700 and 800 ft. deep, seems to be the effect of a bursting up of some power formerly located deep in the crust of the earth, displaying the immensity of the force of the explosive elements that are held beneath our feet. By artificial steps cut in the rock, we descended to view the water falls formed by the meeting of the rivers Mynach and Rheidol, over lines of rock some 600 feet high—a glimpse of which would well repay a journey from any part of England. Proceeding up the hill, we soon reached the property lately acquired by the North Hafod Mining Company, which is entitled to some remark, from the fact of its being upon the well-known Frongoch lode. From information gleaned in the locality, we found that this property has been for a long time beyond the reach of the miners' pick, from the fact of Colonel Johns, the Duke of Newcastle, Mr. Haughton, and other proprietors having objected to the Hafod estate, which is proverbial for its beauty, being marred by mining operations. But the love of gold has at length prevailed, and, like every other product that ought to be utilised for the benefit of the community instead of being reserved for private pleasure, this North Hafod Mine is now being explored, having recently been purchased by a London company, who, if we may judge from the mercenary manner in which the miner is conducting his useful, though perhaps not very ornamental, operations, seem to have less exclusive notions; for in our hearing orders were given to continue the prosecution of the works with unrelenting vigour. The appearance of the outcrop of the lode at this mine is worthy of some description. It is composed of carbonate of lime and black oxide, mingled with red and other shades of gossan, which are regarded by the miner as a very favourable indication. A wheel-pit has been nearly completed to receive the machinery, and in a few days sinking will be commenced upon the course of the lode. We wish them every success that their enterprise and outlay entitle them to receive. We also noticed near the Devil's Bridge the segments of a water-wheel, which will be erected at the West Silver Bank Mine.

The deputation then retraced their steps to Aberystwith, where a meeting was held with the lords and their agents and merchants, representing, we understood, about two-thirds of the whole of the mineral estates in the county of Cardiganshire. Among those present we may mention Mr. John Morris Davies, representative of Col. Powell, and county coroner; Mr. Theodore Paul, harbour master; Mr. Thomson, banker; Mr. J. Graham Williams, representative of Mr. Pryor Loveden; Mr. Thomas Jones, and Mr. C. Richards. Among the gentlemen from London we may mention Messrs. Cotterell, Cockcroft, Nunn, and Milsted (directors of the West Silver Bank Mining Company), and Mr. T. Spargo, secretary, who we understand is also secretary of the Hafod Mining Company; Mr. Matthew Francis, mining engineer, was also present. During the meeting much valuable information was elicited, which we have the satisfaction of presenting to our readers.

Mr. JOSEPH COTTERELL was called to the chair, who, in opening the proceedings, said that as far as he was concerned, he had visited Cardiganshire for the purpose of gaining reliable information with regard to its mineral resources; and seeing so many gentlemen around him who were practically and scientifically acquainted with the subject, he felt satisfied that the sole object he had in view—the accumulation of data in connection with the mineral resources of Cardiganshire—in visiting that place would be fully answered. As he was directly connected with the West Silver Bank Mine, his attention had naturally enough been more particularly directed to that spot. From the statements and information he had previously received with respect to that property, he had formed a very favourable impression with regard to it, but he was glad to say that his impression had been more than confirmed by what he had that day seen. If, a short time back, not having seen the large amount of wealth there, lying near as well as upon the surface, waiting only for the skilful hand to extract it from its bed? He would not at present further detain the meeting, but would be glad to hear any information which the gentlemen present might have to communicate.

Mr. JOHN MORRIS DAVIES said that he regarded the subject of the development of the resources of their county with the greatest interest, having for some time past devoted considerable attention to the subject. He had in his possession an old book, in manuscript, dated 1744, which said—At a place called Frongoch there is to be seen a fine lode, with a string of ore an inch wide, solid up to the surface; here, I think, some day or other there will be a great mine. That property was now called the Llanos M. nos, which, thanks to Capt. Matthew Francis, who formerly managed them, were still producing large quantities of ore, from which enormous profits were realised. He wished to make some few remarks upon this increasingly-interesting subject, because he thought that some of the representations with regard to the mineral productiveness of Cardiganshire, inserted in the *Mining Journal*, were received with some distrust, on account of the apparently fabulous profits which, upon a small outlay, some mines were said to have re-



turned, and were still returning. Now, from personal observation and research, he with pleasure bore testimony to the truth of the statistical statements that had been put forth by his friend, Capt. Matthew Francis. With regard to the Cwmystwith Mine, that was so old a mine that no man could tell when it was commenced—whether it was not worked by the ancient Britons long before Julius Caesar put his Roman nose into this country. Though not exactly in his memory, he knew that Mr. Bonnell had there made a large fortune; and that another gentleman, who worked the mine for only 12 years, during which time he believed he extracted and sold about 16,000 tons of lead, producing a profit of 100,000*l.* It was then thought, naturally enough, that the whole of the ore had been extracted. Another party took the mine, but were not very successful, till Capt. Francis induced them to sink a shaft upon a certain spot, saying—"If the ore was not there it ought to be there;" and although the water percolated to such an extent as to render the sinking an expensive operation, Captain Francis persevered, and sank the shaft straight into the ore. From that time the mine has been steadily producing ore, the returns for the months of August and September being 333 tons; and he had been told by one of the managers the other day that he could continue to produce the same quantity from the ore already available for 18 months to come. The hills of Cardiganshire were often visited by people who, instead of mining, merely dug holes into the hill; and from the incompetency of those entrusted with the management of the mine, failure must result. He was happy in being able to inform the gentlemen present that Colonel Powell was willing to do everything in his power to encourage the development of the mineral resources of his property.

Mr. THOMAS SPARGO, after stating that what he had seen that day at the West Silver Bank Mine more than confirmed his most sanguine expectations, remarked that England was greatly indebted to the kindred sciences of geology and mineralogy for its present position among the nations of the earth, and its unrivalled attainments in manufactures and commerce were equally attributable to its metallic productions and their adaptation to the useful arts. In support of which, he might perhaps be allowed to adduce the following facts:—There were annually consumed and exported 80,000,000 tons of coal, and there were raised and smelted upwards of 18,000,000 tons of iron ore, producing 8,250,000 tons of pig-iron. There are raised from our mines 236,896 tons of copper ore, which yielded 15,368 tons of metallic copper. From our other native minerals there are obtained 6695 tons of tin, 63,528 tons of lead, and 4357 tons of zinc. The value of our mineral and coal exports amounted to 26,595,573*l.*, and are produced from the annual amount of clear profit realised upon the returns could not be estimated at less than 9,000,000*l.* Such is the true and accurate position of mining in this country, and yet in the face of this immense production of mineral wealth there are a class of prejudiced persons who deride mining as a speculation. It was a lamentable fact that the class to which he alluded are ignorant of the value of the mineral so raised, and though attracted by the thousands of beautiful products of our metallic processes, which impart a splendour and grace to the residences of royalty and the opulent, they seemed to forget the fact that it was the result of the condemned system of mining. They are indebted to mining for many of the comforts and luxuries of life, and our present high state of civilisation was in no small degree owing to the development of that great and important branch of British industry. Our first commercial visitors, the elegant and polished Phœnicians, sought Britain's shores to purchase its early-known productions. Commerce, the handmaid of civilisation, gave an impetus to industry, which steadily progressed in the development of the mineral riches of the kingdom, until it attained its present unrivalled greatness. If time permitted, he would refer to the mines of Cornwall and Devon, with which he had been acquainted from his infancy, and could give some startling illustrations of success attendant upon legitimate mining enterprise. He thought, before they separated, such a man of information would be elicited with regard to the mineral resources of Cardiganshire, as would incontrovertibly prove that every mine in the country, if worked with energy and spirit, had produced a source of permanent wealth to the investors. From the increased knowledge of mining, aided by the mighty science of geology, and the introduction of that useful mechanism, the steam-engine, the deepest treasures of the earth were more economically and certainly developed, augmenting the annual mineral produce, and rendering success in legitimate mining undertakings all but a certainty. But he would now pass to the more immediate object of their meeting—the development of the Cardiganshire lead mines. His friend (Capt. M. Francis) would refer more particularly to the value of the lead traversing the sett, the geological indications presented, the value of the country, and connected with the practical development of the undertaking, and, therefore, he could not do better than to call upon Capt. Francis to give to the meeting all the information he possessed upon the subject. As, however, many of the gentlemen he saw around him might, perhaps, not be familiar with the general circumstances connected with the company, he might state that it was originally intended to work the mine privately, but after due consideration by the parties holding a large interest, it was determined to introduce it to the notice of the public. The greatest care had been exercised in the selection of individuals to act upon the project, and who should be perfectly competent and able to direct its operations to the satisfaction of the general body. In that respect, he was happy to say, they had entirely succeeded; and the gentlemen who had consented to act upon the board, now present, although not practically acquainted with mining, were of such a position and standing as to be an ample guarantee for an efficient and honest conduct of the company's affairs. Great care had also been taken to select those who would carry on the operations at the mine in the most skillful manner, so as to secure success with the least possible delay and expenditure. He was also glad to say that one of the most influential gentlemen in the town of Aberystwith had consented to act as purser, and to take the sole command of the financial part of the company's affairs in this part of the county—he referred to Mr. Thomson, the banker. Under such circumstances, with such prospects, and possessing every element necessary to carry out efficiently the operations of the company, he thought they might safely reckon upon a permanently successful career. From what he had that day seen, he felt quite certain West Silver Bank would, if properly developed, prove itself to be a lasting and profitable mine.

Mr. COCKCRAFT said, although practically unacquainted with mining, he thought the most cautious observer must feel justified in assuming that in West Silver Bank they had a valuable property. When the exceedingly encouraging statements with regard to their West Silver Bank property were laid before him, he must confess that he thought they were too good to be true; but he was glad to say his most sanguine expectations had been realised—not only so, but he had been perfectly astounded at what he saw. If seeing was to be believed they certainly had a fine course of ore, and he conscientiously believed that West Silver Bank would turn out a very great success. If evidence were needed to show that the West Silver Bank was peculiarly favoured by Nature for the production of mineral, it was abundantly supplied by the testimony of Captain Matthew Francis—than whom no one better knew the geological character of the Cardiganshire district—who stated that he had never seen such prospects so near the surface. But it did not require a practical mind to know that it was a very unusual thing to find such a character of ore at the surface, some of which he had broken with his own hands. But whatever their prospects might be, unless their financial arrangements were conducted with efficiency and regularity, their mine, however valuable it might prove itself to be, could not in its results be satisfactory to the proprietors. As he had connected himself with the direction, it would be his constant endeavour, as it would be that of his colleagues, to conduct the whole of the details under their care so as to ensure the confidence and esteem of the proprietors.

Capt. M. FRANCIS, in answer to questions, said that the machinery had now been provided for sinking the mine to a deep adit, which would be about 40 fms. below the surface; the whole of this machinery had been bought for 150*l.* The work already done was inconsiderable in point of returns, though very important with reference to the demonstration of the value of the property, and he took it for granted that this was the very best proof that all the money yet spent had been properly applied. It is true that the configuration of the ground, and the run of the lodes, are proverbially favourable to deep mining, but in no instance that has come under my notice for the last 20 years has such a discovery been made for so little money, and he congratulated the Cardiganshire company, and their engineer on the results of their operations. He believed that this little mine will soon become one of the greatest mines in Cardiganshire; the evidences of a great formation of metal were indisputable, and would soon become patent to the world. He had, in the course of his avocation during a quarter of a century in the county of Cardiganshire, witnessed the opening of many great mines, but he had never seen one of which, from the preliminary appearances, he was so certain of success. The winter was coming on, and for some months their hopes of great progress would probably be liable to disappointment; however, he expected that their engine-shaft would be sunk at the rate of 3 fms. per month, and that, making every allowance for frost and other hindrances, they would be ready for a 10 fms. shaft by next May. He thought that the erections would be made before that time, and that before this time twelve months they would be in a state to make good profits. He could not see that the expenditure can exceed 50*l.* per month, which is an exceedingly moderate outlay for such an unopened large mine.

Mr. NUNN said he had certainly that day seen at the West Silver Bank Mine such a sight as he had never before—a number of men extracting mineral in large quantities from a trench which was but a moderate depth from the surface. Although not acquainted with the general character of lodes, he had understood it was a very unusual thing to discover such a body of metal near the surface, and he congratulated himself and his colleagues in being the participants of such a great success. By the exercise of a judicious economy he thought they might reasonably expect profits would soon be realised upon a small expenditure. Although it was true that mining was a speculation, yet, when they possessed a property which contained such peculiarly favourable elements, he thought an economical and judicious development could not fail to secure a lasting success.

Mr. MILSTED contrasted the cost of mining in Cardiganshire with that in Cornwall and Devon, stating that even the draining of one mine in the latter place had cost more than had been spent in opening all the mines in Cardiganshire. He had that day visited the West Silver Bank Mine, and he was greatly pleased at the quantity and character of the ore ground it contained. He had examined several mines in the district, and he had observed that the deeper they explored the more abundant was the ore. It was, therefore, impossible for him to give way in his faith that the West Silver Bank would become one of the most valuable mines in the district. An adit level would drain the mine to a considerable depth, and water machinery would effect all that was necessary for many years to come. It had been peculiarly gratifying to him to find that so far from the statements that had been made with regard to the property having been exaggerated, that they had been more than confirmed by what they had that day seen; and he could only say that he congratulated himself, as well as his colleagues, in having become connected with such a desirable investment.

The CHAIRMAN concluded the proceedings by stating that he was happy in having presided over such a meeting, for much valuable information had been elicited.

#### THE DINNER.

On Tuesday an elegant dinner was provided at the Lion Hotel, Aberystwith, which was attended by the gentlemen above-named.—Mr. COCKERELL again presided. The usual loyal toasts having been passed, including the health of the Lord-Lieutenant, Mr. C. RICHARDS proposed the health of the Chairman. He felt assured that the whole of the gentlemen around that festive board hailed with the greatest satisfaction the presence of a gentleman in Aberystwith; and he sincerely hoped that the enterprise with which he had associated himself would more than realise his most sanguine expectations.—The toast having been drunk with musical honours.

The CHAIRMAN, in graceful terms, acknowledged the compliment. Having for the last day or two devoted some attention to the examination of the hills and mines of Cardiganshire, the impression he had hitherto entertained, that mining was a difficult subject to understand, had been entirely removed. He saw that a person exercising ordinary judgment might soon learn sufficient to have a tolerably clear notion of its details. He congratulated his fellow-travellers, who had accompanied him from London in a somewhat dreary season of the year, upon finding themselves met by such an influential set of gentlemen, and he hoped the present occasion was but the initiation of a friendship that would be perpetuated. (Hear, hear.)

Mr. J. G. WILLIAMS wished to propose the health of a gentleman who had been extensively connected with the mines of Cardiganshire, particularly within that immediate district. He referred to Capt. M. Francis, who was associated, with the mineral interest at large, but he had become intimately connected with the mines of Cardiganshire, having made the stratification of that district his peculiar study. By means of that study he had been able to trace the lines of lodes which had hitherto been thought to have had no existence. It was to him, he believed, they were in a great measure indebted for their great mine, the Goginan, and it was he who also laid the

foundation of the Cwm Baryd, and several other mines. He hoped that Capt. Francis would meet with a handsome reward for the very successful manner in which he had brought before the public some of the richest mines in Cardiganshire. He concluded by proposing the health of Capt. Francis, which was drunk with due honours.

Capt. M. FRANCIS felt it his duty to express his acknowledgments for the handsome manner in which the toast was proposed, or for the cordial reception it met with. It was true he had devoted 30 years of his life to the mines of Cardiganshire. In his connection with those mines he had been much more successful than he could have expected, for there was scarcely one of the veins in the country he had touched but what had returned with considerable profits the money expended upon its development; and he felt assured that any amount of capital brought to Cardiganshire, and judiciously expended in opening its veins, would be multiplied by continually accumulating profits, for he believed there was no field of industry in the United Kingdom calculated to give so large an interest upon the capital invested as the unwrought veins of Cardiganshire. He considered Cardiganshire, without exception, the best district of any in England for mining. If people would but invest their money in a district where steam-engines were not required, but which possessed magnificent hills from the sides of which the veins could be easily reached, they would make immense profits with one-tenth of the expenditure that was required when steam-engines were necessary. He did not know of a single instance in Cardiganshire where shafts had been sunk to sufficient depths, and where the mine had been fairly and properly laid out, that success had not been attained. Perhaps it was a much prouder day for him than for anyone else present, as he had laboured for nearly 30 years in the mining field of Cardiganshire, and he had that day found the seed sown long ago ripe to the harvest, and his dearest wishes crowned with success. He had shown the great course of ore at the surface at West Silver Bank, about which there could be no equivocation, secrecy, or mystery, for there lay the broad bands of rich lead ore for 60 to 80 ft. in length, and a portion of the lode for 8 or 10 feet wide open to the daylight. This was far too great an opening in the vein to leave any doubt as to the amount and value of its produce; he had no doubt that for every 5*l.* note expended in breaking ore in this deposit fully 20*l.* worth of ore would be got. They all saw the facilities for working this immense mass of metal—the Deep Dingle—to the north, from which adits could be run in at right angles to the lode. Southward would open sections of the ore ground that would last for years, making thousands per annum profit, if the ore continued as it appeared at the surface; and for this they had the guarantee that the rock was an unprecedentedly deep one, much deeper than the Cornish bearing measures; while laterally to the north and south, in the same channel of rock, they had mines 600 to 700 ft. deeper than the outcrop of their ore. At Frongoch, to the south, the rich ore at the surface still continued as rich, if not richer, in the bottom of the mine. The quantities of ore and sales were still rapidly increasing after 30 years' yield, and the profits greater than ever; probably this year they would not be less than 10,000*l.* to 12,000*l.* upon an original outlay of 2500*l.*, or even less, but this cannot be exactly ascertained, as it formed a portion of the purchase-money of many mines. At Goginan, where the workings were fully 1000 feet deeper than at West Silver Bank, the quantities of ore in the deepest workings were increasing daily, notwithstanding the many hundreds of thousands of pounds worth of lead and silver that had been extracted from the vein. This mine, Goginan, lies to the north of West Silver Bank, so that the West Silver Bank Mines lie between two immense mines, the lodes of which are filled with incalculable treasures of metal from the surface to probably thousands of feet in depth, and these springs of national prosperity will never be exhausted. This may seem to be a bold expression, but he used it after due consideration, and with the slightest mental reservation. The rock on which these great lodes are formed is five miles in thickness; it is homogeneous. Thirty years of hard work on the Frongoch lode has only made a scratch, so to speak, in it to the depth of 100 fathoms. In Cornwall we have mines 300 fathoms under the sea, the result of the operations of miners for centuries. The Cardiganshire mines afford scope for operations to ten times this depth, evident from every consideration that can be brought to bear upon the question either practically or scientifically. In consideration of this fact alone we have the consolation that the Cardiganshire miner will never want work, and that the excellent London capitalists to whom he is explaining his views and their friends connected with them, will never want metal; and he asked how or in what manner could this great blessing be sufficiently appreciated? But, going into practical mining, the business of the day, he desired to inform them that they had procured a water-wheel of 20 feet diameter, and 4 feet wide on the breast; they had marked out the line of rods; they had commenced to sink an engine-shaft on the excellent course of ore before alluded to, and about Midsummer next they would be driving their first 10 ft. level on the course of the lode, and opening up produce for the market, on the best principles of fair mining. Most of this work would be afterwards superseded by adit levels; but he did not counsel them to wait for the adit now, but to begin to sink and work the ore ground vigorously, and at once, by means of machinery.

Mr. DAVIES, after thanking all that had been said by Capt. Francis, proposed "Success to the West Silver Bank Mining Company," coupling with the toast the name of Mr. SPARGO.—The toast having been drunk with musical honours.

Mr. SPARGO, in graceful terms, said that he regarded the West Silver Bank as a mineral property peculiarly favoured by Nature. Its indications were exceedingly good; it possessed a strong and masterly lode, and every element that could be desired to make it a permanent and profitable property. During his long experience he had seen many lodes, but he must admit that he never saw one which geologically possessed such a marked character for the production of substantial riches. Although very young, his observations had been made to him of the intrinsic value of the property, he must say that his most sanguine expectations had been far exceeded, for he had never in the whole course of his experience seen such a lode near the surface as that he beheld that day in the West Silver Bank. It was a lode from 10 to 12 ft. wide, and with a beautiful footwall, which by miners was considered a most important feature, whether there were ore in the lode or not—in fact, he had seen sufficient to prove to him that they had a champion lode, and he was perfectly convinced they would soon reach a deposit of ore. The surface work would be proceeded with forthwith, and the whole of the practical details conducted with judicious economy and vigour, and he hoped, as he believed, that the means and enterprise would be employed with promptness and vigour. It was to his mind an inexpressible gratification in the manner in which the development of the mineral resources of the county were regarded by some, for he looked upon mining as one of the most important mainstays to the success of this empire. Statistics proved that the mineral produce of this country amounted to 40,000,000*l.* per annum, and that 8,000,000*l.* per annum was paid in dividends; therefore, mining was not so speculative as some people would have them believe. If they considered the various commercial enterprises, whether they were banks, canals, railways, or anything else, he thought it would be found that no class of enterprise would return such a proportion of divisible profit as the mining industry. (Hear, hear.)

Capt. M. FRANCIS said there was a gentleman present conversant with the mining district of Cardiganshire, who had very successfully exerted his influence since he had been connected with the agency of the property. He alluded to Mr. G. Williams, the agent of Mr. Price Loveden, the lord of the manor. As Mr. Loveden had done much for the mining interest in every way, and as he had encouraged, and was still encouraging, the whole mining cosmography of the district, he (Capt. Francis) was satisfied the company would, with due honours, drink the health of the lord of the manor.

The WILLIAMSs returned the compliment on behalf of the lord of the manor. After passing a high eulogium on Mr. Loveden, he said he considered the Cardiganshire district one of the best in the kingdom for mineral; it presented every facility for economical development; good roads led up to all the mines, and they were provided with an ample water supply. Their district presented every inducement for speculation, and he was satisfied every exertion in that direction would meet with the most abundant reward.

Mr. PAUL, in appropriate terms, proposed the health of the Chairman and directors of the West Silver Bank Mining Company.

The Chairman thanked Mr. Paul for the kind and complimentary manner in which he alluded to the district, and also to the gentlemen connected with it, and he expressed his gratification for the large amount of interesting statistical information communicated. As to West Silver Bank, with the satisfactory prospects presented, with an efficient engineer, and a judicious board and secretary, they must prosper. If perseverance, energy, and uprightness of intention on the part of the directors had anything to do with the prosperity of the West Silver Bank, then he said it should prosper. Since he had occupied that chair he had heard a great deal of interesting information about the mines of Cardiganshire, as to what results had been achieved in times far anterior to the memory of the present generation, and he thought it was forward to that extraordinary time when Macaulay's "History of England" might be written, and the remaining stones of London, and contemplating the ruin of that great city, and the greatness of the people that now exist, without looking forward to that period, it was quite possible that at some time or other another Capt. Francis would be giving to a similar gathering some account of the West Silver Bank having achieved the most satisfactory results upon the expenditure of a moderate outlay. (Hear, hear.)

Messrs. Cockcroft, Nunn, and Milsted appropriately acknowledged the compliment, each expressing the greatest confidence in the success of the enterprise with which they had become associated.

The toast of Mr. Davies and Mr. Thomson having been drunk with all honours, the proceedings terminated.

#### CARDIGANSHIRE MINING.

[FROM A SPECIAL CORRESPONDENT.]

Your able correspondent from Aberystwith in his notice of various mines in this district, inserted in last week's Journal, omitted to mention the one of the most rising mines in the locality, I mean the SOUTH LISBURNE Mine, held under several leases from the Earl of Lisburne and Mr. William Chambers, by a few private capitalists, who are working the same with the spirit and energy such a property deserves. Captain Matthew Francis, whose judgment and knowledge of the Cardiganshire district is not surpassed, if equaled, by any other gentleman of the same profession, but who, by-the-bye, has no interest whatever, personal or otherwise, in the mines alluded to, speaks thus of them to one of the parties interested:—"I know them from personal inspection to be a right good and valuable concern. You can make almost incredible profits at South Lisburne." I have no other motive in alluding to the mines in question than that of directing your attention and that of private capitalists, at the present time to the great and sure advantages that will result from the investment in mines judiciously selected in the district of Cardiganshire. The time is not far distant when there will be no more cheap sets to be obtained. The landowners are becoming alive to the change of things, and it will be well for the investing public to be on the look out too. What with the railway, now in progress, and the march of improvement evidently set in throughout the principality, the mining interests may fairly look forward to this long-neglected district being properly developed. Colossal fortunes have been already made here for very small beginnings, and others in sure and certain progress, and as facts are stubborn things, the enquirer after the truth may very soon satisfy himself that legitimate mining in Cardiganshire is not a mere speculation—there is the reality, not a shadow, Nature's bountiful gifts. Results are not on paper only, but in the bankers' coffers, or, what is better still, in the pockets of the judicious and careful speculator, and in numerous instances upon a comparatively small outlay confined to a few hundreds of pounds, not dipping into the thousands at all.

PORT MADOC.—Our correspondent from this place informs us that large orders have been received at this port from France for slates, and that at a meeting held at Bangor, on Saturday, by the great quarry proprietors it was agreed to advance the price 10 per cent. It has been calculated that any increase which may take place in the production of slate in the principality during the next 10 years would not supply the present annual demand. It is fully anticipated that large demands for Welsh slates will spring up in France, and the demand in all our large towns and cities for roofing and slab slates exceeds anything before known. We anticipate that a large demand will spring up for shares in this class of investment, as capital may be safely and profitably invested here, if only common prudence and honesty be observed.

GEOLOGICAL SOCIETY.—The following papers will be read on Wednesday:—On the Deposits at Bovey Tracey, Devon, by J. H. Key; On some Carboniferous Brachiopoda from the Penarth, by T. Davidson, F.R.S.; and On some Volcanic Cones at the Foot of Etna, by Signor G. G. Gemmellaro.

#### Mining Correspondence.

##### BRITISH MINES.

ABERDOVEY.—A. Eds: The ground in the cross-cut, in the 43, is without alteration. The slope on the main lode, north of the winze, in the 32, is producing 1 ton per fathom. The slope in the 22, on the main lode, is producing about 1½ ton per fathom. No alteration in the 12 ft. level. The dressing and surface operations are proceeding satisfactorily, and we have shipped a parcel of 30 tons of ore.

ALFRED CONSOLS.—S. Uron, T. Hosking, Nov. 13: There is no change in the 160, on the main lode, driving east and west of Davy's engine-shaft, for the past week. The lode in the 150, driving east of the above shaft, is 5 feet wide, worth 3*l.* per fm. The lode in the 140, driving east of the above shaft, is 3½ feet wide, producing 2 tons of ore. We have commenced a rise over the back of the 130. The 120, driving east of said shaft, is 3½ ft. wide, worth 8*l.* per fm. No. 1 winze, in bottom of the 140, on the north lode, is worth 15*l.* per fm. The lode driving east of cross-cut in this level is 6 inches wide, worth 4*l.* per fm. The north branch driving east of cross-cut in the 30 is 6 inches wide, worth 5*l.* per fm. Taylor's slope, in bottom of the 140, is worth 10*l.* per fm. Roberts's slope is worth 12*l.* per fm. Richards's slope is worth 15*l.* per fm. Floyd's slope is worth 12*l.* per fm. Our pitches are looking better than for some time past.

ALFRED Y. CHUBB.—John Hughes, Nov. 9: The lode in the deep adit is much the same as last reported, only there is much more carbonate of lime than we have seen for some time. We are in the No. 3 adit cross-cut 15 ft., but have seen nothing to value yet; a couple of fathoms more will satisfy on this point. There is more water coming from the breast as we go in. The ground in the No. 3 adit has altered a good deal the last 2 fms.; great strong bars are coming in, and the ground is very stiff for driving; this is the ground that used to make lead in the hill, and I expect some alteration here for the better. The four men in the old mine, back of hill, are getting fine lumps of lead in the old stuff, by clearing the old level, and there is some fine lead left standing on the sides of the level. There must be lead here, or they could not have left so much behind. I expect we shall open a good mine here shortly.

BEDFORD CONSOLS.—J. Mitchell, Nov. 14: In the middle adit level the north lode is about 14 in. wide, composed of spar, mundle, lookan, and a little copper ore. The No. 1 south lode is about 2 ft. wide, composed of spar, mundle, peach, and spots of copper ore, and looks promising for better results. There has been nothing met with in the cross-cut south since we passed through the branch underlying north, referred to in my last report. There is nothing new to report in the tributaries' pitch.

BEDFORD UNITED.—J. Phillips, Nov. 11: The ends and stops throughout the mine continue to yield as last reported.

BICKLEIGH VALE PIGONIX.—John Hamblly, Nov. 13: The lode in the end is looking better, with more capel in it; but it is still hard. If we could get through a little faster I think we should soon get a change, with mineral. The water is still on the increase, which speaks well for an open lode before us, and which would enable us to drive quicker towards the granite.

BORRDALE (Cumberland).—William Dixon, Nov. 14: In the working on Jim's stage, where we are driving, we have cut through the cross vein; the vein is now contracted, and not so promising at this point. The workings on Gill's stage, where we are rising, are progressing favourably, from whence we have obtained 4 lbs. of first quality black lead.

BYNTAIL.—J. Roach: The character of the lode in the 10 east has a little improved since last reported, but is not yet affording sufficient lead ore to value. We are making good progress in driving the 25 west of cross-cut. The stratum accompanying the lode shows symptoms of alteration, which leads us to believe that we shall soon find the commencement of the deposit of ore driven through in the level above. The other points of operation are without change since my last.

BULLER AND BASSET UNITED.—S. S. Bice, Nov. 13: The prospects in the 100 east are without any change to notice. The lode in the 100 west is not quite so large now as we have seen it, but the lode is similar to what we have driven through, and it looks very promising. The appearance of the lode in the 80 west is without any particular change in its character, being still large and regular, with a tolerably large proportion of chlorite and mundle, with copper ore intermixed, a strong champion lode. The lode in the 60 is looking more favourable for ore now than when we wrote you last, and the ground is also improved; it tends in now re-set, at 6*l.* per fm. We believe that, with perseverance in our operations, we shall open out a good, lasting, and profitable mine.

CARDIGAN CONSOLS.—J. Sanders, Nov. 9: To-day being our setting-day, the following bargains were set: Quarry shaft to sink below the adit by six men, at 18*l.* per fm. The lode yielding stones of ore occasionally, but not to value. The deep adit to drive west at quarry shaft by four men, at 6*l.* per fm. The lode in this adit is yielding good stones of ore occasionally, and likely to improve. The 20 to drive west at Bag shaft by six men, at 5*l.* 15*l.* per fm.; the lode poor at present. The adit to drive east on copper lode, east of Bog shaft, by four men, at 5*l.* 10*l.* per fm.; the lode in the end is poor at present, but by driving about 20 fms. it will get under the Trial shaft, where a good branch of copper is discovered at surface, at which point a good deposit of ore is expected to be met with. The adit to drive west on the north part of the lode, in the old mine, west of the engine-shaft, by four men, at 5*l.* 10*l.* per fm. There are some small branches of good ore in this place, which are likely to lead to a good discovery. The western trial shaft to sink by six men, at 7*l.* per fm.; this shaft goes down 8 fms. from surface; the lode is all the width of the shaft (5 ft.), intermixed throughout with blende, lead, and copper ore; a very fine looking lode, and very likely to make a good bunch of ore in depth.

CARADON CONSOLS.—W. Rich, Nov. 12: The caunter lode in the engine-shaft is much the same as it has been for some time past; a strong kindly lode, with plenty of floor-spar, and good spots of ore. There has been nothing done towards proving the engine lode during the past week, owing to this lode having taken a more vertical direction. We are now leaving it to stand to the south side of the shaft for the time. The south part of the Menadue lode still holds out good indications, and carries good spots of ore. One of the small ore branches spoken of in my last report looks kindly to come in contact with the main part of the lode in about 6 or 8 ft. further driving. I have put a pair of men to open east of the cross-course to search for the Menadue lode in that direction. The north lode is just the same as when taken down last week, producing about ¾ ton of ore to the fathom. The north cross-cut is being urged on as fast as possible.

CARN CAMBORNE.—W. Bishop, Jun., Nov. 12: There is no change to notice in any part of the mine since last week's report.

CEFN CILCEEN.—C. J. Williams, Nov. 14: In the 73 yard level now driving the lode has been discovered by the shale bed now about coming through the forebreast, and I am of opinion that this bed will continue for about 6 feet, by the thickness of the same shale above, afterwards we shall come to the run of ore above the shale bed. The 60 yard level, east of rise, is without any alteration of importance. The same level, west of rise, is rather harder for driving, and does not look quite so well for ore; the ground varies very much in a short distance. The 60 yard level, west of footway, is looking well; I have this day broken stones of solid lead weighing 1½ cwt. each, and it has improved the level, and the lode is 1 foot wide, 8 inches of which is solid ore, besides blotches of ore in the other parts of the lode. The shaft is progressing satisfactorily. In clearing the 80 yard level west towards the junction we have discovered good ore in the back and bottom of the adit level, but have not reached the end yet. I have let a tribute pitch in the back which will leave a good profit to the company. The Gwynne shaft is going down well. We yesterday discovered a level westward; I went over the stuff, and have discovered good spots of ore in the back; the lode seems to be very large at this point, so I intend to clear out this level to see the forebreast, which I think will be going upon Susan's lode. The surface operations are going on but slowly on account of the weather.

CEFN CYM BRWYN.—Nov. 12: The lode at the 80, east of Taylor's shaft, is 4 ft. wide, yielding 12 cwt. of ore per fathom. The lode at the 68, driving west of cross-cut, 70 fathoms west of Taylor's shaft, is 5 feet wide, yielding 12 cwt. of ore per fm. The 68, going east of shaft, is suspended for the present; the lode at this point is 2 feet wide, and will produce about 7 cwt. of ore per fathom. The men are taken from the 68 and put with the men in the 56, in order to push it on as fast as possible, but we intend to resume the driving of the 68 again in about a month. The lode at the 56, or deep adit level, driving east of Taylor's shaft, has much improved within the last six or eight weeks, and is now yielding a steady and kindly lode, containing good bunches of lead ore, and likely to improve. This level has passed through the cross channel of ground at the surface, and is now entering a very promising piece of virgin ground eastward, where the chances are highly favourable. The lode at the pitch over the 80 fm. level, 40 fathoms east of Taylor's shaft, is 5 feet wide, and producing 15 cwt. of ore per fm. The lode in the pitch over same level, 30 fms. east of shaft, is 4 feet wide, producing 12 cwt. per fathom; the pitch over same level, 20 fathoms east of shaft, is yielding 8 cwt. of ore per fathom. The lode at the pitch over the 68 fm. level, 60 fathoms east of Taylor's shaft, is 3 feet wide, producing 10 cwt. per fathom; the lode at this pitch, over same level, 50 fms. east of shaft, is 2½ feet wide, producing 10 cwt. per fathom, producing 10 cwt. of lead ore per fathom. The pitch over the 56 fm. level, 70 fathoms west of shaft, is yielding 8 cwt. of ore per fm.; the pitch over same level, 50 fathoms east of shaft, is yielding 9 cwt. of ore per fm. The dressing, &c., is going on regular.

CLARA UNITED.—J. Lester, Nov. 13: The lode in the 32, west of cross-cut, continues to yield from 12 to 14 cwt. of ore per fm.; as also the slopes in the back of the same level, east of winze. The lode in the 32 is much the same, occasionally yielding stones of ore. No alteration in the character of the lode in the 20, driving east, since my last. We have got our flat rod up from the shaft to the large wheel, the length of which is 530 yards; to-day we shall have the crank, &c., from the foundry, so that we can put them to work by Thursday or Friday; we will then commence to set up the drawing machine; and by the time that is finished we shall be in a position to sink the engine-shaft another lift.

CREDES.—J. Phillips, J. Jenkins, Nov. 14: The trial-shaft is being sunk by four men with all possible speed, but our progress at present is much impeded by water, owing to the late heavy rains; the lode is 5 ft. wide, worth 12*l.* per fm. for copper and silver; 5 fms. more to sink to reach the adit level, which will give us 12 fms. of backs; we hope to complete this in three weeks from this date, when men will at once be put to stop the backs, and large quantities of mines in question can be sent to surface. The floors for the reception and dressing are being got ready, and the dressing of the ores already at surface will soon be commenced. On examining the barrows we find that they contain large quantities of ore; they are let at 12*l.* in 1*l.*, to commence next week.

CROOKHAVEN.—H. Thomas, Nov. 11: The engine-shaft is now being sunk at the rate of 3 feet per week, and if things go on as at present we shall soon reach the 60. I advised you of having purchased a new lift of pumps to complete our pitwork to the 60; I did this to prevent any delay that might possibly occur from an influx of water. The lode sinking under the 40 is to all appearances improving. The necessary ground is met, and the windlass hung, and the men are in a fair way of working, and in the present state of the ground we can sink between 3 and 4 fathoms per month.—Western Trial Shaft: In the last two days driving south towards the champion lode we have a decided change of ground; it is now composed of white elvan, spar, and gossan, and as far as I can judge, I do not think we are far from the north side of the lode; this point shall be pushed with all possible dispatch. If anything occurs, which I think likely to be the case, I will let you know. We have now sufficient timber on the mine to last at least for 9 or 12 months; in fact, the mine is well supplied with materials of every description.

CROWLWY.—J. Roach: We are still sinking the winze under the level of the bed of the river on the footwall we have mundle and small pieces of solid lead ore.

CUDDRA.—Fras. Puckey, E. Dunstan, Nov. 13: In the 100 driving south, west of Tickle's shaft, we are in the lode 6 ft., which is composed of quartz, prinn, and gossan, but have not yet reached the south, or tin, part of the lode. We shall commence taking down the lode at Walker's shaft to-morrow. The lode, when last taken down, was worth 3 cwt. of tin per 100 shafts, for 3 ft. wide. In taking down the south part of the lode, in the 60 west, we find it to produce good stones of tin, and looking promising to improve. In the winze sinking below this level the lode is 12 ft. wide; the south, or tin part, for 2 ft. wide, is worth 2 cwt. of tin per 100 shafts. In No. 1 slope, east of Walker's shaft, the lode is 4 ft. wide, worth 2 cwt. of tin per 100 shafts. In the No. 2 slope the lode is 6 ft. wide, and will yield 1 cwt. of black tin per 100 shafts. In the winze sinking below this level, east of the above-named shaft, the lode is 6 feet wide, composed of quartz and peach, mixed with capel, but at the present time poor.

DALE.—R. Nines, Nov. 13: The Pipe vein has improved, and is looking much better than ever it has done before. The new shaft is now down from surface 36 fms. 3 ft.



from nat-rock shaft, towards Painter's lode, 3 fms.; the end is being driven by six men, at 67. per fathom. The lode in the 51 end, east of cross-cut, is 4 ft. wide, worth 45¢. per fathom for tin; the present price for driving, by six men, is 10¢. per fm. The lode in the same level, driving west, is 1 foot wide, opening tribute ground; driving by three men and three boys, at 4¢. 10¢. per fm. The lode in the 41 east is 2 ft. wide, producing low quality tinstone and good stones of copper ores, and has an improving appearance. The end is being driven by three men and three boys, at 67. 10¢. per fathom. Vivian's shaft is sunk 5 fms. below the 30. sinking by six men at 9¢. per fm. The shaft



lode in the 30, driving east of the latter-mentioned shaft, is improved, being 1 ft. wide, producing 1½ ton of good quality copper ore per fm. in 160. Our tribute pitches throughout the mine are producing fair quantities of tinstuff. Our last month's tin fetched 3507. 10s. 6d. We have also sampled to-day 15 tons of good quality copper ore. Altogether the mine is improved.

**NORTH WHEEL ROBERT.**—J. Richards, Nov. 14: Murchison's Shaft: In Elliott's cross-cut south, in the 52 west, the ground is rather hard for driving. In the 42 west, east of Crowle's winze, on No. 1 south lode, the lode yields good stones of ore. In the 30, east of Edwards's cross-cut, on No. 2 south lode, the lode is 18 in. wide, composed of capel, muddle, and a little ore. To the west of this cross-cut (Edwards's) No. 2 south lode is not yet met with. In Davis's rise, in back of the 30, on the south part of the main lode, the ground is favourable for progress; the lode, however, is unproductive. In Rich's rise and slope, in back of the 30, on the south part of the main lode, the lode is worth 1 ton of ore per fm. In Will's slope, in back of the 30, on the north part of the lode, the lode is worth ¾ ton of ore per fm. In Stancombe's cross-cut, north in the 30, the ground continues favourable for progress.—Trial Shaft: In the 42 west, and west of Scooble's cross-cut, on the south part of the main lode, the lode at present, although not worth much for ore, is promising, and must improve, as in Sortridge Consols, home to the boundary for 5 fms. high, and still holding on above the 40, the lode is worth 3 tons of rich ore per fathom. In the 30 cross-cut south (Boit's) the ground is favourable, and good progress is being made. In the 30 east and west, on the trial lode, the lode has been taken down. In the former direction the lode is small—1 ft. wide, and for the present is of no value; in the latter direction it is from 2 to 3 ft. wide, and worth about 8s. per fm. for tin ore.

**NORTH WREY.**—T. Kemp, Nov. 14: We are making good progress in driving the cross-cut east at the 68 of old shaft, in favourable ground. In order to push on the end with speed, the men commenced working at twelve o'clock on Saturday night, and left off at 10 o'clock on Sunday night. The engine and machinery are on the mine, and in good condition. The wheel and pitwork are in order, and keeping the water with ease.

**OKEL TOR.**—W. B. Colwell, Nov. 13: Since the last report there has been an improvement in the 50 fm. level end. The lode has increased in size, being now 5 ft. wide, and yielding 3 tons of ore per fathom. The men are making under these immense muddle capels driven through in the 60s. In cross-cutting south at the 50 we are still cutting branches of spar, containing muddle, and the water from the end is increasing. The various pitches in the 65 and 50 continue to look well, and are yielding quite equal to our expectations.

**OLD TOLGUS UNITED.**—W. Gilbert, Nov. 14: The lode west, in the 52, is about 2 ft. wide, producing stones of black and yellow copper ore, mixed with a beautiful soft spar; the kilias is light, and sprigs of copper ore throughout. The 42 west is about 2½ ft. wide; a well-defined lode, composed of a beautiful spar, good stones of copper ore, blende, and muddle; also stones of silver-lead, and letting out more water. This end appears to improve as it gets nearer the cross-course. The 32 west is about 1½ ft. wide, producing more copper ore than when I last wrote of it; it is improving in mineral. The 52 west, on the new south lode, is letting out more water and getting more capels than for some time past.

**PEDN-AN-DREA UNITED.**—W. Tregay, J. Thomas, Nov. 9: In the 110, east end, a patch of granite has come in, reducing the lode to less value, but it has again improved, and is worth 50s. per fm. The men have been hindered working in the bottom of the 100 by water. The 100 end west is worth 9s. per fathom. The 90 west is poor. The 80 west, on Skinner's, is worth 8s. per fm. The 90 rise is worth 25s. per fathom. The 68 winze is worth 30s. per fathom; we expect soon to effect a communication here, and bring away from this ground a large quantity of tinstuff.—Street and Bragg's: The lode in the 47 east is poor. The 40 east is worth 8s. per fm. We sold to-day black tin to the amount of 5621. 8s. 1d.

**PENDEEN CONSOLS.**—W. Eddy, J. Warren, Nov. 9: In the 130 north the lode is still worth 10s. per fm., and promises much for further improvement. In the 118 north we have got under the No. 2 winze coming down from the 106, and do expect to hole it in a day or two. The end is very wet, and very important looking ground for ore. The stipes in the back of this level are much the same as when last reported; but the stipes in the back of the 106 are much improved.

**PENHALE MOOR.**—N. Pascoe, Nov. 12: Our setting on Saturday was as follows:—The 30 to drive east, by four men, 4 fms. 4 in., or to hole to the eastern shaft, at 50s. per fm. The eastern shaft to sink, by four men, 6 fms. 4 in., or to hole to the 30, the filling and landing of all the stuff in the mine to two men, for two months, at 5s. per month. A pitch in the back of the 20, west of the eastern shaft, to two men, for one month, at 12s. 11d. A pitch in the bottom of the 20, to two men, for one month, east of the eastern shaft, at 9s. 11d.; a pitch ditto, to two men, for one month, at 5s. 11d.; a pitch ditto, to two men, for one month, at 5s. 11d. If these pitches continue as at present, we shall more than pay costs this month, and I hope by the end of the month to be able to inform you of a great improvement in the 30, as I think we shall hole the eastern shaft by that time.

**PENHALLS.**—J. Pratt, sen., J. Gribble, Nov. 9: Engine-shaft: The lode in this shaft, sinking below the 30, is 3 ft. wide, and at times producing stones of tin, but not to value. In the 30 east the lode is 1 ft. wide, worth 6s. per fathom. In the 30 west the lode is 1 ft. wide—poor; we are daily expecting to communicate this end to the old workings. In the 20 east the lode is producing saving work for tin. In the 10 east the lode is 18 in. wide, producing saving work for tin. The lode in the winze sinking below this level is 2 feet wide, and worth 7s. per fathom.—Western Shaft: We are pushing on the clearing of the 30, west of this shaft, and still finding it to be full of stuff. No change to notice in any other part of the mine.

**PENTRE LYON.**—F. Evans, Nov. 13: There is nothing particularly new to report from this mine; the shaft is as usual. We have built a small house to keep our timber and materials, and a place for the miners to change in.

**POLHIGY MOOR.**—S. Bennetts, Nov. 13: We have most likely cut the lodes nearest north and south of Treffry's shaft, and although they are not rich, yet they contain some good stones of tin. The south one is seen 2 ft. wide, but not cut through to the opposite wall, and very wet. The north one is from 8 to 10 in. wide, and very dry, but a very promising-looking lode. Those leaders of tin we cut a few feet behind the south end are no doubt droppers belonging to that lode, and good ones too, which will, I think, give us something valuable here again.

**PROSPER UNITED.**—W. H. Martin, W. Millett, Nov. 14: Hosking's engine-shaft, sinking cut down below the 30 with all possible dispatch. We find the shaft full of rubbish accumulated on the sollar, which must have been left in the 40, consequently our working at present is rather slow. The sumpmen are making good progress in cutting down Louisa's engine-shaft below the 30. The winze in the bottom of the 30, east of Louisa's, is sunk as deep as the 40. We have about 2½ fathoms to drive west to communicate with that level; the south part of the lode, 3 feet wide in the bottom of the winze, is worth for tin 40s. per fathom, with every appearance of further improvement, as the lode increases in value every foot we sink. The lode in the 30, east of ladder-roof shaft, is 2½ ft. wide, at present unproductive, but the ground seems to be of a more favourable character for producing mineral. The lode in the 30, west of ladder-roof shaft, continues to improve, and will yield 3 tons of good quality copper ore per fathom, having a fine appearance, and good results may be anticipated from prosecuting the levels west in this part of the property, as this lode, which formerly proved so productive in Rodney and East Rodney, is standing whole for a considerable extent to surface. In the 30, driving west of Henry's shaft, the lode is 18 inches wide, producing saving work for tin. Murchison's lode in the 18, driving east, is 18 inches wide, looking more kindly, producing a little black and yellow copper ore, but not enough to value.

**PROVIDENCE MINES.**—W. Hollow, P. Rogers, W. Dunstan, Nov. 13: In consequence of an improvement in the 65 and 75 ends east, on the new south lode, our samplings of tin in the present month will exceed our expectations. The 55 is also looking better; but, at the same time, we beg to say that our north carbons are poor.

**REDMOOR.**—T. Taylor, Nov. 12: We have reached the western heaven in the 40, on Johnson's, and commenced to drive west on its course; ground 4 ft. per fm., no lode being taken down. The lode in the 50 west is 2 ft. wide, worth about 9s. per fathom. The ground in the back of the 50 still continues good. No alteration in the tribute ground. We intend sending samples of 5 tons of tin this week.

**RHOSVYDOL AND BACHELLEDDON.**—Nov. 11: The stipes in the end of the 15, west of the Cardon, to open on a large and ore lode, quite as productive as last week. In another stipe, in back of the 15, a course of lead ore, yielding 20 cwt. per fathom, has dropped in from the south lode. The other stipes in the 15 and 10 are without change. The end of the 70 east has considerably improved since this day week. The shaft sinking on new discovery, on surface, contains more gossan in the lode than any lode I have seen here before; and the bottom there is a rich soil of ore in the gossan 1 ft. wide. By reason of another lode being so near, and also the cross-course, it ought to turn out well, and there is every indication of its doing so. The adit driving on the lode continues to yield good lead ore.

**ROSEWALL HILL AND RANSOM UNITED.**—E. Thomas, Nov. 13: In the Ransom engine-shaft, sinking below the 110, there is no change worth notice since last reported on; the lode is much the same in size and value, worth 8s. to 10s. per fm., a very promising lode; the lode in the end east of shaft is improved; it is now worth 6s. per fm., and has a promising appearance; the lode in the end west of said shaft is without change, still worth 25s. to 30s. per fm. The lode in the 80 end east is 2 ft. wide, worth 20s. per fm.; the stipes over this level much the same as when last reported last week, worth 15s. to 20s. per fm. The stipes in the bottom of the 60 are worth 8s. per fm. The other parts of the mine are without change.

**ROSEWARNE CONSOLS.**—J. Berriman, Nov. 12: Our setting on Saturday last was as follows:—The flat-rod shaft to sink by six men, at 7s. per fm.; the lode is 1 ft. wide, of a very kindly appearance. The 20, south-east on the caunter, to drive by three men and three boys, at 50s. per fm.; the lode is 1½ ft. wide, with a very promising appearance. The 3s. east of Ellen's shaft, to drive by four men, at 42s. per fm.; the lode is 10 in. wide, and in stones of ore in and through the lode in the gossan 1 ft. wide. The 40, east of engine-shaft, to drive by four men, at 50s. per fm.; the lode is 2 ft. wide, worth 1 ton of good copper ore per fm. We have set four tribute pitches to eight men, varying from 12s. to 15s. 11d. We have put two men to drive a cross-cut south on the caunter, to cut a branch which we suppose to be the east and west lode; we shall be able to say more about it in a week or two.

**ROUND HILL.**—Nov. 13: The lode in the sump-winze, sinking below the 62, north of new engine-shaft, is 2½ ft. wide, worth 15 cwt. of lead ore per fm. The stipe in back of this level, over said winze, has fallen off in value, now worth 12 cwt. of ore per fathom. The stipe in back of the same level, north of No. 2 winze, will yield 1 ton of lead ore per fm. The stope south of said winze will yield 25 cwt. of ore per fm. The stope in the back of the 60, south of Perkins's winze, south of shaft, will yield 15 cwt. of lead ore per fm. The cross-cut at the 52, south of engine-shaft, is suspended. The tribute pitches are yielding fair quantities of ore. Our last parcel, sold to Messrs. Walker, Parker, and Co., and Messrs. Newton, Keates, and Co., left Minsterley on Monday last, and no time shall be lost in getting another parcel ready.

**SCORRIER CONSOLS.**—F. White, Nov. 14: We are progressing favourably with the sinking of Palmer's shaft, now 4 fms. below the 30; within the last few days, however, we find the water slowly increasing, and in all probability a few fathoms of deeper down the aid of the engine will be required. In the cross-cut south in the 30, at Palmer's shaft, the ground continues easy for driving, and the men are making good progress. The cross-cut proceeding south from new shaft goes on pretty well considering the change of ground, which retards a little the progress of the men's driving. The clearing of the adit and adit shafts are daily kept going, and will be continued on until completed.

**SIGFORD CONSOLS.**—W. Hosking, Nov. 13: The lode in the engine-shaft is 3 ft. wide, still producing good work for copper; the ground is little easier for driving. I have two men cross-cutting through the north copper lode, close to the present end; so far looking very well, yielding copper ore throughout.

**SMITH'S WOOD.**—W. Hosking, Nov. 13: The winze sinking on No. 1 lode is now down about 10 feet below the ditto level; the lode appears to be taking a more vertical dip than it has hitherto done, still producing good work for tin. The shaft sinking on No. 2 lode is down 12 fms.; the lode is still continuing its size of 6 feet in width, and producing good work for tin throughout. In consequence of the late heavy rains a strong force of water has been met with; the men are consequently prevented from sinking deeper until we get pumping-power, which can be obtained by attaching a line of horizontal rods to the present or a new wheel. We shall now commence to open both east and west on the course of the lode at the present depth, where from all appearances we shall break a large quantity of work for the stamps. The walls of the buildings are completed, and the roofing far advanced. The dressing-floors and all other surface matters are being pushed on with, but the adit state of the weather greatly impedes the progress we should otherwise be making.

**SORTRIDGE CONSOLS.**—K. Jackson, Nov. 14: In the 62, west of the western cross-course, no lode has been met with. In Gilbert's winze, sinking below the 50, on

the south part of the main lode, no lode has been taken down this last week. In Mayne's stipes, in back of the 50, on the south part of the main lode, the lode is worth 1½ ton of ore per fathom. In Crew's stipes, in bottom of the 40, on the south part of the main lode, the lode is worth 30s. per fathom. In Stanton's stipes, in back of the 40, on the south part of the main lode, the lode is worth 3 tons, or 30s. per fathom. In Eva's rise, in back of the 40, on the south part of the main lode, no lode has been taken down this last week. In Gribbion's rise, in back of the 40, on the south part of the main lode, the lode is worth for length of rise, 9 feet, 22s. per fathom. In the 30, east of the eastern cross-course, on the south part of the main lode, the lode is 3 feet wide, yielding stones of ore, and promising further improvement. In the 20, west of Arthur's cross-cut, on the south part of the main lode, the lode is 1½ ft. wide, yielding stones of ore. In the 40 east, on the north part of the main lode, the lode is 1 foot wide, yielding stones of ore. In Rowe's stipes, in back of the 40, on No. 2 south lode, the lode is worth 1½ ton of ore per fathom. In Blanchard's stipes, in back of the 50, on No. 2 south lode, the lode is worth 1 ton of ore per fathom.

**SOUTH CARADON WHEEL HOOPER.**—W. C. Cook, Nov. 9: The lode in the rise above the 62 does not contain quite so much ore as it did last week. The other places are without any apparent change.

**SOUTH CARN BREA.**—T. Glanville, Nov. 9: Tutwork Setting: The new shaft to sink under the 68 by nine men, at 20s. per fm. The 88 to drive east of the flat-rod shaft by four men, at 6s. per fm. The 68 to drive east of the new shaft by four men, at 8s. per fm. The 68 cross-cut to drive south by two men, at 6s. per fathom. The 68 cross-cut to drive north by two men, at 5s. per fathom. The 48 fm. level to drive east by two men, at 6s. 10s. per fm. The rise in the back of the 40 by four men, at 4s. per fathom. The 40 to drive east by two men, at 6s. per fm. The winze to sink below the 30 by two men, at 3s. 6s. per fm. The winze to sink below the 20 by two men, at 4s. per fm. The adit level to drive west by two men, at 11s. per fathom.

**SOUTH CRENVER.**—E. Chegwinn, Nov. 12: The lode in the flat-rod shaft, sinking below the 105, is 1½ ft. wide, producing stones of copper ore. The 105 east is 2 ft. wide, producing good stones of copper ore. No change in the tribute pitches.—South Mine: In the 51, driving east and west on the middle lode, the lode is very kindly, and producing good stones of tin. In the winze sinking in bottom of the 52 the lode is 2 feet wide, worth 4s. 4d. per fm. Nothing new to report in any other part of the mine.

**SOUTH DOLGOATH AND CARNARWHEN CONSOLS.**—Wm. Roberts, Nov. 12: We are obliged to suspend sinking the shaft from surface, in consequence of the late heavy frosts; the men are now put to drive the adit east, on the caunter lode. In the 50 cross-cut north the ground is improved, and letting out more water than usual, and giving strong indications of being near the lode.

**SOUTH EXMOUTH.**—J. Medlin, Nov. 13: Everything is progressing favourably. The engine is going one stroke per minute, and consuming 4¼ cwt. of oil in 24 hours. About three weeks ago, when the water was four strokes per minute, we used 13 cwt. for 24 hours. There is nothing new in the cross-cut, this week; the ground is everything that could be desired. We had a barrowfull or two of very rich work from the end driving north, on the east lode, this week.

**SOUTH LADY BERTHA.**—R. Unsworth, Nov. 14: The stipe in back of the 40 is still yielding 2½ to 3 tons of copper ore per fathom. West of Leaman's rise the lode is 3 feet wide, worth 2 tons of copper ore per fathom. In the rise behind the shaft the lode is poor at present. We are pushing on this rise as fast as possible to hole to the 30; when complete we shall commence sinking to the 52, which will lay open a deal of ore ground, having a fine course of copper ore opened in the 40 for many fathoms in length, and improving going down. We have full 30 tons of ore toward next sampling, and I have every confidence in South Lady Bertha proving a valuable mine.

**SOUTH WHEAL BETSY.**—W. Stephens, Nov. 12: During the past month the end going west of Lay's shaft has been driven 3 fms. 0 ft. 8 in., and is set to six men, at 9s. per fathom; stented 1 fathom. There is no change in the lode to notice.

**SOUTH WHEAL TOLGUS.**—Nov. 13: Youren's Lode: In Mitchell's engine-shaft, sinking below the 130, the lode is 20 in. wide, of peach, spar, and muddle. In the 130 west the lode is 15 in. wide, consisting chiefly of flookan and spar. The lode in the 120 west yields 1 ton of ore per fathom. The lode in the winze sinking in the bottom of the above-named shaft, the lode is 10 fms. 0 ft. 8 in. wide, and is 15 in. wide, worth each yields 3 tons of ore per fathom. The lode in the 110 west yields 1 ton of ore per fathom. The lode in the 100 west produces 1 ton of ore per fathom. No lode has been taken down in the 90 west since last reported. In the 78 west the lode is 15 in. wide, of muddle, spar, and jack, and looking more promising than for some time past.

—South Lode: The lode in the 130 east is 2 feet wide, chiefly of spar. In the 120 east no lode taken down for the week. The lode in the 110 east is 20 in. wide, of spar and prlan. The lode in the winze sinking in the bottom of the 110 east yields 1½ ton of ore per fathom. We have two stipes over the back of the 110 east, each yielding 2 tons of ore per fathom. The lode in the rise in back of the 100 east is 15 in. wide, of muddle, spar, and jack, and looking more promising than for some time past.

—New South Lode: The lode in the 78, west of the cross-cut, is 16 in. wide, of peach and spar.—North Lode: In the 90 west the lode is 18 in. wide—unproductive.

**ST. DAY UNITED.**—E. Ralph, J. Cook, J. Gilbert, Nov. 9: In the 164 end, west of Billing's shaft, the lode is 4 ft. wide, and worth 35s. per fathom. The stipes in the 164, east of shaft, to reach the winze, in order to drive the end, is worth full 50s. per fathom; stoping by eight men, at 3s. 10s. per fm. In the 154 end, east of shaft, the lode is 2 ft. wide, and worth 12s. per fm. In the 154 end, west of shaft, the lode is 2 ft. wide, producing saving work for tin. The stipes in the back of the 154, east of shaft, is worth 18s. per fm. The stipes in the back of the 154, west of shaft, is worth 18s. per fm. In the 144 end, east of shaft, the lode is small and poor. The stipes in the back of the 144, west of shaft, is worth 20s. per fm. The winze sinking below the 144, west of shaft, 7 fms. before the 154 end, is very much improved, now worth 20s. per fm.—Blascoe Pool: In the 162 end, west of shaft, the lode is 18 in. wide—unproductive. In the 153 end, west of shaft, the lode is 2½ ft. wide, and will produce 3 tons of ore per fathom, and improving; we hope to give you more particulars next week, when more of the lode is taken down.

In the 114 end, west of Trevinings's, the lode is 2 ft. wide, and worth 12s. per fathom. There is no change to report on either at Russell's or Wheel Unity.

**ST. IVES WHEAL.**—H. Taylor, Nov. 14: The lode in Giesler's engine-shaft, sinking below the 50, is 12 inches wide, and its appearance is much the same as when last reported; the ground about it looks more favourable, or making tin. The 50, east of Giesler's, is not yet holed to the winze, but we expect it will be in a few days; the ground is hard, which have made against our progress; no holding this level. The lode in the 30, east of Giesler's shaft, is 20 inches wide, and worth 20s. per fm.—Roderick's Lode: The lode in the 20, east of Louisa's shaft, is 9 in. wide, and worth 5s. per fm.

The 10, west of Louisa's shaft, is cleared to the cross-course, and we hope to get through it in a few days. We calculate to complete the clearing of Richard's shaft to the deep adit in two or three days. Nothing else new to notice in the cross-cut, this week.

**TAMAR.**—Nov. 13: We are making fair progress in sinking the engine-shaft under the 237, and which is now down 6 fms. 1 ft., with favourable ground for sinking. The lode in the 237 south is 3 ft. wide, and will produce 7 cwt. of lead per fm. There are two stipes in the back of this level, each producing 6 cwt. of lead per fm. In the 228 we have been driving west, and have cut the western lode, and have now commenced driving south on the lode. We cannot say anything about the value of this end, the lode not being cut into, but shall do so as soon as possible. The stipes in the back of this level, Nos. 1, 2, and 3, are producing 7 cwt. each of lead per fm., and No. 4, 2½ cwt. of lead per fm. The stipes in the 215 south are driving by the side of the lode; the stipes in the back of this level, four in number, are yielding as follows:—No. 1, 20 cwt. No. 2, 10 cwt. No. 3, 8 cwt. No. 4, 7 cwt. of lead per fm. The stipes in the back of the 205 will produce 8 cwt. of lead per fm.

**TOLCARENE.**—Nov. 13: Field's Lode: In Field's shaft, sinking below the 30, the lode is 2 feet wide, of gossan, spar, and occasional stones of ore. The lode in the 20 west is small, and unproductive. In the 30 west the lode is 20 in. wide, of spar and gossan, and occasional stones of grey ore. The lode in the 30 east is 2 ft. wide, of gossan and spar, a promising lode. In the 20 east the lode yields 1½ ton of ore per fathom. The lode in the 10 east yields 1 ton of ore per fathom. In the 10, west of the lode, the lode is 15 in. wide, of soft spar and gossan. The lode in the winze sinking in the bottom of the adit east is small and unproductive. The ground in the rise in back of the adit, towards King's shaft, is very hard.—Enthoven's Lode: The stope over the back of the adit level is worth for tin about 15s. per fathom. The ground in the adit end, driving south from Field's shaft, is very hard.

**TREFFRY CONSOLS.**—J. Phillips, S. Woodwards: The cross-cut is extended to below the 2 fms. 3 ft., the last 6 ft. driving is in good ground. We have branches of barytes, spotted with lead and blende; we think to reach the lode by the end of next week. The ground is very hard, and is highly mineralised; we think there is but little doubt of our having a good lode.

**TREHILL COPPER.**—H. Rickard: There is no alteration in driving the 50 west from the old sump-shaft since last week; the ground being still easy for driving. We have a small branch in the cross-cut south, west from western shaft, carrying spots of ore. I expect shortly to intersect the main part of the lode. Rapson's pitch still maintains its favourable appearance, and the men are raising some very good work indeed.

**TRELAWNY.**—F. Pryor, Nov. 9: Everything is going on very satisfactorily here. Nothing particularly new, except the bottom level (72 north) is improving, also a winze in the 150, south of Smith's. We shall sample at our usual time the same quantity and quality.

**TRELOWETH.**—T. Richards, Nov. 9: The 144 to drive east of engine-shaft; the lode has a promising appearance, worth about 6s. per fm. In the 144 fm. level cross-cut west, driving south, we are cutting through the lode. In the 134, driving east of engine-shaft, the lode is worth 12s. per fm. The back of the 134 to stope west; the lode is worth 25s. per fm. In the winze sinking below the 134 east the lode is worth 10s. per fm. The cross-cut south in the lode at the 124 east is containing spar principally. In the 124, driving east of engine-shaft, the lode is unproductive. In the stope in back of the 134, east of winze, the lode is worth 15s. per fm. The stipes in the bottom of the 134, west of sump-winze, the lode is worth 15s. per fm. In the stope in bottom of the 134, east of sump-winze, the lode is worth 20s. per fm. The sump-winze to sink below the 124 east; the lode is worth 18s. per fm.

**TRELVON CONSOLS.**—R. James, E. Pooley, Nov. 13: At the new shaft no lode is taken down below the 40 fm. level. In the 40 west the lode is worth 8s. per fathom. In the 40 east the lode is worth 12s. per fathom. In the 30 and 20 west the lode is poor. There is no change in either of the three cross-cuts. The stipes throughout are yielding about their usual quantity of tinstuff.

**TRENCROFT.**—J. Hollow, F. Bennetts, Nov. 14: The lode in the 100, east of Giesler's engine-shaft, is worth 11. 10s. per fathom. The lode in the 100, west of the engine-shaft, is worth 2s. per fathom. The lode in the 90, east of the engine-shaft, has not been taken down in the past week. The lode in the 90, west of engine-shaft, is worth 2s. 10s. per fathom. The lode in the 80, east of the engine-shaft, is worth 3s. per fm. The lode in the winze sinking below the 80 is worth 3s. per fathom. The lode east of the 60 cross-cut north is of a promising character for improvement, at present worth 3s. 10s. per fathom. The lode west of the 60 cross-cut north is not clear of the cross-course; it is about the same character as east. The 60 cross-cut south, east of the cross-course, has no change to notice. The 30, east of Hollow's shaft, is not to value; it has a kindly appearance. Mitchell's flat-rod shaft is sunk below the 50 fm. level 9 fathoms; the lode is worth 6s. per fathom.

**TREVENEN AND TREMENEER.**—J. Webb, Nov. 13: The lode in the engine-shaft, sinking below the 170, continues equal to what it has been reported, also the stipes east and west of shaft at this level. We are pushing on the 170 east towards the old engine-shaft, and have about 8 fms. more to clear and secure to reach it; we shall be obliged to clear out this level, not only to the old shaft, but to the eastern extent for taking up all the water before throwing in pump for clearing the deepest point of the old workings. The 150 and 140 are going ahead very favourably, and will lay open before long much tin ground. Our sale of tin last month was 6 tons 7 cwt.

**TREWEATHA.**—J. Scoble, Nov. 12: The lode in the 30 north is 2½ ft. wide, and will produce 3¼ cwt. of lead per fathom. In the same level south the lode is 2 feet wide, and will produce 2¼ cwt. of lead per fathom. The ground in the cross-cut, driving east in the 30, is somewhat harder, and not quite so good for progress, still letting out a quantity of water. The stope in the back of the 15 south will produce 3 cwt. of lead per fathom.

**TRUMPET UNITED MINES.**—G. R. Olders, Nov. 9: We are progressing satisfactorily with the different bargains, but I do not see any alteration calling for remark.

**UNITED MINES (TAVISTOCK).**—J. Tucker, Nov. 13: Saturday last being our settling-day, the following tutwork bargains and tribute pitch were set:—The 72 east first a bargain to take down a piece of lode by six men at 3s. 10s., then the end to be continued by the same men. The 72 west by six men, who are to drive on the elvans embracing the two lodes, at 6s. per fathom, stented 2 fms. The appearances at this new level are very cheering, the lodes and elvans are very strong, and a leader of most splendid work

for tin has been discovered on the hanging wall of the north lode; the remainder of the lode (which is 3½ ft. wide) yields stamps work. The 60 east to be continued by six men, stented the month at 6s. per fm.; the lode here is much the same as last reported. A tribute pitch in back of this (60) level, east and west of the winze, to six men for one month, at 10s. 11d.; the takers have to put in 12s. on their tribute account. All the wheeling, filling, and landing of tutwork stuff at 12s. per fathom, and tributers' stuff at 18s. per 100 kibbles to as many men as required for one month.—P.S. From the fact of our tin sold last week fetching the best price of the week we purpose to sample again at the end of this month.

**VALE OF TOWY.**—A. Waters, T. Harvey, Nov. 12: In the engine-shaft, sinking below the 100, there is little change of importance to notice since last reported on; the part of the lode being carried is 3 feet wide, composed chiefly of carbonate of lime and blende, with stones of sulphate of barytes and patches of rock interbedded. We calculate to get the present sump 11 fms. below the level, and be in a position to commence opening for the plat at the 110, by the end of the current month. In the 100, driving north of shaft and cross-cut, the lode is 2½ ft. wide, with occasional spots of lead interbedded, but not to value. In the 100, south of the great cross-course, the lode is 3 ft. wide, yielding blende and stones of lead ore, and improving; the price for driving this end is reduced from 6s. to 5s. per fm., and we hope to find easy ground from the present point up to Field's shaft. In the 90, driving south of said shaft, the ground is getting softer, and the lode opening wider, so that we expect an improvement in this direction shortly. In the 80, driving north of Clay's shaft, the lode is of great width, yielding stones of ore, but not to value. In the new adit level, driving south of Nanta, the lode is 4 ft. wide, composed of barytes, with spots of lead ore—of a kindly character. We have let 26 pitches, at tributaries, varying from 100s. to 140s. per ton of lead ore.

**WENTNOR (PANTASA).**—T. Pierce, Nov. 13: Bradley's shaft is in harder ground than it has been all the way from surface, and we expect to reach the limestone every day.—Grosvenor Shaft: The vein at the bottom of the shaft east is 4 ft. wide, in every promising ground, composed of spar, clay, and calamine, and wherever this stratification is found it has always turned out profitably. There is no alteration in any other part of the mine to notice.

**WEST BASSET.**—W. Roberts, Nov. 12: The lode in the 114 west is larger (3 ft.), and is more promising than it has been for some time past. In the 104 west the lode is 2½ ft. wide, with occasional stones of ore; the same will apply to the lode in the 94 and in the 84, driving west. In the 75 west the lode is 3 ft. wide—tribute ground. In the 65 west the lode is 2 feet wide, at present unproductive. The 52 west produces stones of ore occasionally; the lode is 2 ft. wide. In the eastern part there is no alteration since last reported.

**WEST BEAM.**—W. Hosking, Nov. 12: The masons are still making good progress with building the engine-house. In driving south to intersect Brothers and the Ladies tin and copper lodes, the ground continues the same as last reported on. The clearing and securing the adit level going west is being proceeded with as fast as the nature of the work will permit.

**WEST CARADON.**—In the 155, bottom level, on Menadue lode, we have an improvement, but I do not attach so much importance to the value as to indication, having cut down the water from the winze 20 fms. in advance of this end; this, in my opinion, looks well for the bottom of the mine.

**WEST DEVON CONSOLS.**—O. Rowe, Nov. 13: The lode in the 40 east is improving in character, being about 1 ft. wide, composed of strong muddle, capel, and quartz, with occasional stones of yellow copper ore. The ground continues without change, and good progress is being made. The machinery is in good working order.

**WEST FOWEY CONSOLS.**—F. Puckey, E. Dunstan, Nov. 4: Western, or Tin Part: In the 135, west of Puckey's north shaft, on Puckey's lode, the lode is 6 ft. wide, worth 16s. per ton. In the same level east the lode is 6 feet wide, worth 30s. per fm. In the 125, east, the lode is 3 feet wide, worth 10s. per fm. In the 110 east the lode is intersected by a large copper lode, which we expect will destroy the tin lode for some little distance. In the rise in the back of this level the lode is 2 feet wide, worth 15s. per fm. In the 100 east the lode is 4 ft. wide, but poor.—Eastern, or Copper Part: In the







Copper ores for sale on Thursday week, at Tabb's Hotel, Redruth.—Mines and Parcels.—Great Wheal Buay 886—Clifford (Amalgamated) 473—South Caradon 499—Fowey Consols 415—North Trekerby 381—Tywarnhaile 325—North Downs 266—Cradock Moor 211—East Crinnis and South Par 190—St. Day United 160—Polmar 135—Perran Mines 66—Gonamens 52—Duchy and Peru 45—Great Briggan 44—Great Crinnis 36—Falmouth and Sperris 16—North Buay 15—Wheal Mary 6—New South Ellen 6—Brown's Ore 6—Elizabeth's Ore 8—Wesley's Ore 1—Wheal Wrey Consols 1.—Total, 4148 tons.



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### Notices to Correspondents.

•• Much inconvenience having arisen, in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be regularly filed on receipt: It then forms an accumulating useful work of reference.

**BROOKWOOD MINE.**—Should Capt. Dunstan's assertion, in the Journal of Nov. 2, remain uncontradicted, both Capt. Dunstan and his friends may suppose he is correct; but nothing is further from the truth. So far from being in Wheel Emma sett, we are a long distance from it in every level in the mine below the adit. This can be proved by a schoolboy, by common arithmetic, by the first rules in geometry, and by plane trigonometry. I can only account for this assertion by bad feelings at the success of Brookwood Mine, which ores sell for double the price of Wheel Emma ores; and with the present prospects in Brookwood, under careful management, it will soon pay dividends. The distance we have to drive to reach the old boundary line in the direction of Wheel Emma, which the Wheel Emma people wish to adopt, varies from 20 fms. to 50 fms. in the different levels; but, as I understand the line as laid down in the plan of Lord Macdonald's lease, given to Brookwood Mine, there is from 20 fms. to 30 fms. more than the above. It is clear that, if the latter be correct, Wheel Emma will have to refund to Brookwood Mine a large sum for ores sold.—SAMUEL ROBINS.

**WHEEL CONCORD—BASTIER'S PUMP.**—In the Journal of Oct. 19 there is an enquiry relative to the chain supplied by Messrs. Nicholls and Co., now at work at this mine, to Bastier's pump, in reply to which I beg to state that there has been no breakage or hindrance of any kind accruing from the chain referred to since it has been at work. I would here further remark that this chain has been fairly tested, having forked the water 6 fms. deeper than it could be forked before it was put there, and the water to adit when it commenced working. Under these circumstances, of course, it had the same amount of work to accomplish as the chain previously introduced, which constantly kept breaking. This machine is now working admirably, and keeping the water with the greatest ease at 47 fathoms deep.—J. DONNAN.

**CLOGAU GOLD MINE, NORTH WALES.**—Referring to the letter of Mr. Ennor, which appeared in last week's Journal, one cannot help coming to the conclusion that because Mr. Ennor was not admitted on his demand, to view the operations on the Clogau Gold Mine, he retaliates by endeavouring to depreciate the property. On the same page of the Journal appears a letter signed "G. J. G.," which shows Mr. Ennor was late because not admitted on the Beariz Mine, in Spain. Mr. Ennor should learn from this second refusal to admit him, that the proper way to gain admission to a mining or other establishment is by an order, or when that can be dispensed with, by a courteous application.—NEMO.

**MINE SHARE DEALING.**—We never interfere in the sale or purchase of shares; or recommend any particular undertaking in which to embark, for investment or speculation. Our advertising columns contain the names and addresses of many who will readily reply to any communication which may be addressed to them, and supply such information as may be required.

**ERRATUM.**—In the report of the Polgar meeting, the Chairman was made to say that the arrears were "2160l.," it should have been 249l. 6s. 7d.

## THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, NOVEMBER 16, 1861.

### COLLIERY WORKINGS—GOVERNMENT INSPECTION.

"BORE-HOLES ARE TO BE KEPT IN ADVANCE OF ALL HEADINGS!"

Such is the extraordinary decision of the Swansea magistrates. What is still more strange, this decision was given on the evidence adduced by two of Her Majesty's Inspectors of Coal Mines. Absurd and untenable as this decision most undoubtedly is, there is one person at least bold enough to approve of and applaud it. Nay, more, if our readers will turn to the 698th page of the *Mining Journal* (Oct. 26, 1861) they will see a communication (headed "Coal Mine Inspection—the General Rules," and signed "Coal") which actually attempts to justify this construction of the Act of Parliament, and reiterates the evidence given before the magistrates so *naïvely* and illogically as to induce us to believe that both the evidence and the letter are from the same source. Be this as it may, the subject has excited great surprise in South Wales, and considerable alarm is felt lest this decision be adopted as a rule or precedent in future.

We have deferred noticing the subject, in the expectation that after due consideration Her Majesty's Inspectors would set themselves right in the public estimation by a frank avowal of their error. This not having been done, and as the interests imperilled by this decision are of vast importance, it would be a dereliction of duty were we not to direct public attention to the subject. The facts are these, on Sept. 28 last Mr. F. H. Perkins, of the Lynch Colliery, was summoned before the magistrates in Petty Sessions at Swansea, to answer an information laid by Mr. Thomas Evans, the Inspector of the District, for "unlawfully and wilfully violating the 15th general rule of the Act, &c., in not keeping sufficient bore-holes in advance, and if necessary on both sides, to prevent inundation," &c. Other charges were also alleged, but as they are immaterial to the subject under discussion it is not necessary further to allude to them. In their evidence both Mr. Evans and Mr. Brough are reported to have said in effect that the Act

rendered it imperative that bore-holes should be kept in advance of all headings, whether approaching old workings, in a virgin coal field far removed from "old men," or whether there was reasonably any danger to be apprehended or not. Mr. Evans supported his opinion by transposing the words of the clause in the Act, and Mr. Brough boldly stated that he knew collieries in which the practice of boring in advance of all the headings was invariably pursued. On being asked to name one colliery where such was the custom, we are told that he exhibited a lapse of memory, which, to say the least of it, was very unfortunate, and much to be regretted. If we have been correctly informed as to what Mr. Brough said, we trust he will avail himself of our columns to set himself right with the public on this subject, as much scepticism, unfortunately, is prevalent.

Unsatisfactory and inconclusive as Mr. Brough's testimony must be regarded, we think that given by Mr. Evans, and countenanced, if not suggested, by his solicitor, is still more startling. This evidence is substantially identical with the letter signed "Coal," and we shall, therefore, assume for the present that this letter fairly represents Mr. Evans's evidence. "Coal" says—"Mr. Perkins wishes it to be thought that the Act of Parliament leaves it for the coalowner to decide whether bore-holes are necessary to be kept going or not. Now, if such be the law, we might as well have none, because a master could always say that he did not think there was any danger of gas, and there all penalty would cease; he would say, 'I did not think the place likely to contain a dangerous accumulation of water,' and so I have not infringed the Act, though I did not keep bore-holes in advance. Fortunately for the poor collier, the magistrates have decided that the law does not mean this, and that bore-holes should always be kept in advance." "Coal" then proceeds to say that "there can be no doubt that this view is correct;" and to prove it, gives his readers the remarkable new version of the clause which Mr. Evans submitted to the Swansea magistrates. In order that our readers may be able properly to appreciate the profound subtlety which influenced the decision of the Bench on this occasion, we will place the 15th clause of the Act face to face with Mr. Evans's ingenious paraphrase of it:—

The Fifteenth General Rule:—  
"Sufficient bore-holes shall be kept in advance, and, if necessary, on both sides, to prevent inundations in every working approaching a place likely to contain a dangerous accumulation of water."

It will be observed that Mr. Evans is not content with a mere transposition of words, but that he also deals more lavishly with the commas; but we question, after all, whether the punctuation is much improved, although we frankly admit that the meaning of the clause is completely altered.

"Coal" resorts to this unscrupulous mode of construing an Act of Parliament, because he thinks if the law be as it appears in the Act it leaves the coalowner to decide whether bore-holes are necessary or not. In this he is mistaken. The Act does no such thing. It leaves no discretion with the coalowner, whatever he may "think." It deals with facts, and is as explicit as it can be. "In every working approaching a place likely to contain a dangerous accumulation of water," and not otherwise, then "sufficient bore-holes shall be kept in advance." This is the plain common sense reading of the rule. To say that such a rule renders boring optional, is a gross absurdity. If the workings do approach a place likely to contain accumulated water, boring is imperative. But this is or is not a fact. If it be a fact it is capable of proof, and on this being given conviction will justly ensue. But surely respectable gentlemen are not to be summoned before the magistrates and convicted, not of a contravention of the Act of Parliament, but of any paraphrase of it which the ingenuity of an Inspector may invent. Our lives and liberties would have but small protection were public prosecutors to have the power to transpose and add to the words, and then punctuate the statutes according to their own notions or likings; and it appears to us that the whole proceeding was extremely un-English, and utterly inconsistent with the spirit of our jurisprudence. Nor was it of the slightest consequence whether it was or was not the custom in some collieries to carry on borings in all headings, whether there was any occasion for it or not; for the magistrates are bound to administer the law as it is, and not to wrest it into agreement with prevalent customs. But the supposition that such a practice is pursued in any colliery appears to us as an improbability of "the first water." Why, we ask, in the name of common sense, should such an enormous additional and useless expenditure be incurred, merely for "the love of the thing," and without any reasonable object?

Should Mr. Evans's paraphrase of the law influence the decisions of other magistrates, and be he practically enacted that bore-holes shall be kept in advance in all workings, it will enormously increase the cost of coal, and render the interference of the Inspectors as great an incubus on the trade as the excise man was in the manufacture of paper.

We deeply regret the occurrence of these proceedings, as we fear they have excited a distrust and repugnance to the Government Inspection of mines which will not be speedily dispelled. It is certain that an excitement has been created, incommensurate, perhaps, with the cause, but highly inimical, nevertheless, to the popularity and future usefulness of Her Majesty's accredited officers.

### MINING CONGRESS AT VIENNA—No. V.

Among the proceedings of this meeting which attracted the greatest share of attention was a lecture by Baron von Ebner, a lieutenant-colonel in the Engineers, on the Firing of Charges by Electricity, and on the Manufacture and Use of Gun-cotton. The gallant officer, with a distinctness and happy facility of expression which excited the admiration of his hearers, described the various methods which have been adopted for the firing of heavy charges of gunpowder, from the old-fashioned *saisisson* to the various applications of galvanism and electricity. Although the galvanic battery has often been most successfully applied to such purposes, he pointed out certain inconveniences which interfere with its convenient adoption in many cases, especially for military objects; and then proceeded to detail the arrangements of an electrical machine, which should be at the same time portable, securely efficacious, and not easily liable to damage. Several machines, somewhat differing in construction, were exhibited, and had been proved capable of firing charges at the distance of some hundred fathoms. They consisted of double discs of glass, or, in other cases, of vulcanised India-rubber, provided with cushions or rubbers, smeared with amalgam, as in the ordinary electrical apparatus familiar to us. Each was placed in a conveniently fitting water-tight case, so that it could be used in the open air even during heavy rain, and yet the whole was compact enough to be carried, in readiness to work, by the aid of shoulder-straps, like a knapsack, on a man's back. It was shown how the serviceableness of the apparatus could be readily tested before being set to do its work, by the length of the spark; and a very few turns of the disc gave a spark an inch long, showing that a charge might have been ignited by means of a suitable cartridge at a distance of hundreds of yards. The Baron adverted with some humour to the different requirements of civil and military blasting, and suggested the usefulness of this method for the former purposes whenever it was needful to ignite either a very large charge, or a number of charges simultaneously. Col. von Ebner then proceeded to discuss the subject of Gun-cotton. Doubtless, most of his hearers had heard many varying opinions of its strength, durability in good condition, and general value; probably many of them have made some themselves, and, undoubtedly, within a year or two of its first production almost every chemist had made gun-cotton, and many, from their own or their friends' experiments proceeded to pass sentence upon it. How would it fare with gunpowder, asked the lecturer, if everybody who knew that it is compounded of charcoal, sulphur, and nitre concocted a little mixture for himself, and then pronounced his criticism on gunpowder as judged by his own production? And yet assuredly there is need of skill and nicety of manipulation, and room for variation of processes in the manufacture of gun-cotton, just as there is in that of gunpowder. The gallant colonel then stated that the Engineer corps had for some years been engaged in perfecting the manufacture of this material, which has been found excellently suitable for the blasting of rock, and that at extensive quarries worked on behalf of the Government, near Wiener Neustadt (south of Vienna), large quantities of it have thus been regularly employed. He exhibited the gun-cotton (*schieswolle*) as manufactured in various forms in the Government laboratories, the most usual and convenient for rock blasting being that of a well-twisted rope, about as thick as the wrist; and he combated by the results of several years' experience the prejudices as to its danger and its liability to decomposition. His statements, in fact, produced a strong impression on the audience, that properly-made gun-cotton is yet destined to play an important part in mining and quarrying. Col. von Ebner concluded his lecture by a few words on the chemical principles of the action of this sin-

gular compound, and having a black board and chalk at his side, he dashed off a long series of chemical formulae, with such readiness and precision that the effect was like that of a sparkling firework, on the conclusion of which he was greeted with loud applause.

At the final meeting it was resolved to hold a similar miners and smelters' International Congress, after an interval of two years; and a long discussion arose as to whether it should again be held at Vienna, or, with the object of further interesting foreigners and provincials, at some other place. Sundry speakers were in favour of Prague, a few suggested Leoben, in Styria, and the agents of Baron Rothschild, at the works of Witkowitz, gave a special invitation to the meeting to assemble at Ostrau, a town close to them, and a station on the railway through Austrian Silesia. The question was put to the vote, when the majority, induced by the compliment of the invitation, the interest of the coal and iron works, and close proximity of the interesting mines of Prussian-Silesia, decided in favour of Ostrau.

Erratum in one of the earlier notices.—For Prof. Turner read "Tanner."

**RATING OF COLLIERIES.**—A case of considerable importance to the colliery interest has recently been decided at the Kirkdale Quarter Sessions—the overseers of Golborne appealing against the decision of the Newton magistrates, given in favour of the owners of the Edge Green Colliery, upon whom an exorbitant tax was sought to be levied. The Messrs. Evans, the owners of Edge Green Colliery, were originally rated in respect of a colliery which they occupied as to so much of it as was in the township of Golborne (for Edge Green Colliery is partly in Golborne and partly in Ashton). The Golborne portion was originally rated at 734l. in the gross and 587l. in the nett. They appealed to the Petty Sessions, and this rating was reduced to 415l. in the gross and 332l. in the nett, which in reality was about 20 per cent. The case occupied the Court no less than six hours, when it was decided that the appeal must be dismissed. On behalf of the overseers of Golborne a case was applied for, it being suggested that a case should be stated containing the whole of the evidence, and that they should take the opinion of the Court of Queen's Bench upon it; but the Chairman stated that they had decided it upon the facts, and did not see any grounds to grant a case. The costs were unhesitatingly allowed against the overseers.

**MUSEUM OF PRACTICAL GEOLOGY—PHYSIOLOGY.**—Professor Huxley, F.R.S., delivered his fourth lecture on the above subject on Saturday last. After showing that contraction in muscular fibre was due to its connection with a nerve, he went on to consider how the nervous system operates to produce such results. This brought him to treat on the nervous system generally, which he said might be best considered under three heads:—1, afferent nerves, or those conveying sensations to a central organ; 2, efferent nerves, those connecting the central organ with the muscles; 3, the central organ itself. All the afferent and efferent nerves of the body were collected into bundles, and passed through orifices into the spinal column, and were continued upwards through the vertebrae to the medulla oblongata at the base of the brain. He now mentioned the structure of the brain, as described as having an inner and an outer sheath, with a delicate white band, and between these a layer of albuminous and fatty matter. This was quite transparent during life, but changed considerably after death. Nerve force, he stated, might be correlated with electricity—that is, out of the one you might produce the other. He now mentioned the classification that was adopted by recent physiologists—sensations with and without the result of consciousness.

**MINERAL OIL.**—At the Geological Society, Dr. A. Gesner read a paper on the Petroleum Springs in North America. After some observations on the antiquity of the use of mineral oil in North America and elsewhere, and on the present condition of the oil and gas springs, and the associated sulphur and brine springs in the United States, the author stated that 50,000 gallons of mineral oil are daily raised for home use and for exportation. The oil region comprises parts of Lower and Upper Canada, Ohio, Pennsylvania, Kentucky, Virginia, Tennessee, Arkansas, Texas, New Mexico, and California. It reaches from the 65th to the 128th degree longitude west of Greenwich, and there are outlying tracts besides. The oil is said to be derived from Silurian, Devonian, and carboniferous rocks. In some cases the oil may have originated during the slow and gradual passage of wood into coal, and in its final transformation into anthracite and graphite, the hydrogen and some carbon and oxygen being dissipated, probably forming hydrocarbons, including the oils. In other cases animal matter may have been the source of the hydrocarbon. Oil and gas, and asphalt and petroleum were referred to by the author, who concluded by observing that these products were most probably being continually produced by slow chemical changes in fossiliferous rocks.

**RAISING WATER.**—At the Institution of Mechanical Engineers, Birmingham, Mr. C. W. Wardle, of Leeds, read a paper "On the application of Giffard's Injector as an Elevator for the Drainage of Pit Workings." This application of the injector was suggested by the writer for the purpose of working out a small portion of the Kippax Colliery, near Leeds, which lay below the main drainage level of the colliery, and at a considerable distance from the shaft; the extent to be worked was so limited that it did not allow of the erection of a special pumping-engine, and hand-pumping was employed until the water had increased in the workings to such an extent that it could not be kept down by this means. The present elevator was then applied, consisting of a simple form of the injector used for feeding steam-boilers, in which the steam and water orifices are fixed at the position suitable for the height of lift and pressure of steam, no adjusting handles or valve being used. The steam is supplied from a boiler at the surface of the ground, and is conveyed by a 1½-in. gas-pipe down through the pit to the elevator, at a total distance of more than 1000 ft. from the boiler; and the water is delivered up an incline pipe from the elevator for a distance of 900 ft., being raised a height of 27 ft. In order to separate the steam before it enters the elevator from the condensed water produced by its passage through the long length of steam-pipe, it is passed through the top of a depositing box, in which the condensed water collects, and flows thence into a self-acting water-trap, by which it is discharged at regular intervals. This serves quite efficiently for keeping the steam supplied to the elevator free from water, and the elevator continues working uninterruptedly for many hours together; and when the quantity of drainage water is sufficient, it works continuously day and night without stoppage. It does not require any attention in working, and is started by simply turning on the steam at the boiler at top. The elevator has now been at work at this colliery with complete success for several months past, and has proved a simple and efficient means of drainage; and, although far from an economical application of steam, is less expensive in this instance than any other plan, since the fuel employed for raising the steam is only refuse slack from the pit, for which there is no other use, and no other cost of working is incurred. The elevator is now being applied also for raising the water supplied for cooling the tuyeres of blast-furnaces, and is in use at other works for filling up the water-tanks during the night for the day's supply, making use of the waste steam previously thrown away from boilers heated by refuse furnaces. It avoids the liabilities to stoppage attending the working of pumps, and is not injured by frost, but gets thawed by the heat of the steam, and quickly starts working, even when it has been completely frozen up.

**MORE RAILWAY ACCOMMODATION FOR SOMERSETSHIRE COLLIERIES.**—Great anxiety seems to be evinced in more than one quarter to provide railway accommodation for the collieries in Somersetshire, and it is to be hoped that between so many friends the coal owners of this part of the country will not eventually find themselves minus of the proposed boon. We briefly adverted in our last to a scheme under the denomination of the North Somerset Railway, and a rival plan is now broached in the Radstock and Keynsham Railway. The latter line, with the branches, will be about 18 miles in length, and will commence at the terminus of the present Radstock branch of the Great Western Railway, passing through the centre of the Somerset coal field, and terminate by a junction with the main line of the Great Western at or near Keynsham. It will accommodate many populous villages, and will, it is alleged, open a direct and unbroken communication between the coal field and the manufacturing districts, as well as materially shorten the distance by rail to Bristol, Bath, and other places already supplied with coal from this district. The line is to be laid out so as to afford accommodation to nearly all the principal pits in the district, for which purpose two branch lines will be constructed, one from Radstock along the Whithington Valley, and the other from Hallatrow towards Timbury and Camerton. The estimated cost of the line is 160,000l., and the Great Western Railway Company have agreed to find the necessary plant and rolling stock, and to work the line on equitable terms; they have also promised to subscribe 50,000l. of the share capital, provided the line be constructed on the broad-gauge principle. The question, therefore, at issue is one of gauges; the promoters of the North Somerset advocate the narrow gauge, so as to form a junction on the one side with the South Western, and on the other side with the Midland line. A meeting has been held at Midsomer Norton for the purpose of promoting the Radstock and Keynsham Railway; it was attended by about 120 gentlemen, chiefly residents in the district, among whom the coal interest was well represented. After a lengthy discussion a vote of confidence in the undertaking was passed by a small majority, and the meeting pledged itself to give its utmost support to the scheme.

**AN EFFICIENT TRACTION-ENGINE.**—It may safely be predicted that the time is not far distant when traction-engines on common roads will be as familiar to the eye as lumbering wagons and expensive teams are at present; but the question still remains to be solved which of the many engines which have been described in the *Mining Journal* are destined to retain a place in public estimation, and which is to become the especial favourite? Hitherto one of the greatest obstacles to the general adoption of steam on common roads has been the difficulty of ascending and descending inclines, and the great amount of wear and tear both upon the engine and on the road which has followed every attempt to provide a remedy. In the traction-engine, however, known as Longstaff and Pullan's patent this difficulty does not exist, the consequence being that it is thoroughly efficient in almost every case where horses could be used. The arrangement of the wheels, &c., is such that there is at all times ample grip to enable a load to be drawn without waste of power, in proof of which it will suffice to mention that one of these engines has been successfully employed in drawing half a dozen loaded trucks up Fentonville-hill (which is a heavy incline), the weight drawn upon this occasion being equal to 24 tons, exclusive of the weight of the engine itself. Perhaps the greatest advantage of the superiority of this machine over those which have preceded it is the adoption of an ingenious mode of placing the boiler, cylinders, and the various more fragile parts which in other engines are continually liable to injury—the whole of the working parts are attached to an independent frame, so that whatever inequalities in the road may be passed over the working parts are relieved from concussion. Nor is this all, the boiler is so suspended upon trunnions that even were the front 3 ft. higher or lower than the back of the engine the level of the water in the boiler would be maintained. Owing to the peculiar difficulties of the manufacturer of this engine (the first one has been made), it is now thrown upon the market, and would, no doubt, speedily repay the purchase money if



employed to let on hire for the removal of heavy and unwieldy materials. The engine has been used by Mr. Reddin, the well-known contractor, and he is so perfectly satisfied with its performance that he has not hesitated to give his opinion that the use of steam employed in such an engine as Longstaff and Pullan's is far preferable to horse-power.

#### MINING IN SCOTLAND—No. XII.

Now that the Highlands and the mining districts have again resumed their winter garb, and as it is just twelve months since I commenced my papers on this subject, allow me to make a *resumé* of the progress towards practical utility which they have certainly in no small degree contributed to, which, without egotism, I may fairly claim to have had some considerable share in bringing about, to my own as well as to others advantage. Those who have read and followed in detail the series of papers I have from time to time contributed to the *Mining Journal* on this important and interesting matter, will have noticed that I have had occasion to complain in bitter and harsh terms of the opposition offered to any development of the Scottish mines, more particularly towards copper mines, by the gentry and landowners generally; they having a pre-existing bias that there is no copper in Scotland which will pay the cost of working. This idea was fostered by a declaration from a noble duke to that effect, ratified by certain interested parties engaged in Cornish and other mining speculations, who naturally imagined their "vested rights" and connexions would thereby be jeopardised. Add to these influences the natural caution of the Scottish character, and the prejudice against any new-fangled scheming (as Mining was termed), the difficulties may be imagined, but cannot be fully described.

I am happy, however, to say these complicated evils and hindrances to Scotland's well-being are rapidly disappearing; doubt is almost annihilated, prejudice is fast declining; the landlords are becoming convinced, they are willing to lower their dues, to relax the oppressive clauses in their leases; in fact, the experience of the last year is such as to warrant the hopes of increased exertion and mutual benefit to all concerned during the succeeding twelve months.

As no proof can be more satisfactory or convincing than authentic documents, issued by Scottish gentlemen themselves—they, too, who were once sceptical in the last degree—I beg to quote the result of nine months' experience in one of the mines I have been instrumental in introducing to public notice. The capital alluded to for testing was under 1500*l*.

The report of the finance committee to the directors of the LOCHWINNOCH CONSOLS COPPER MINING COMPANY, in reference to the proposed increase of capital, says:—

"It is well known to all the shareholders that when this company was formed, about nine months ago, it was understood that the capital then raised was for the purpose of testing the mineral value of East Kaimie, of which a lease had been secured. Encouraged by the success of the early operations, measures were taken to obtain leases of other properties in the neighbourhood; and subsequently an increase of capital, by issuing new shares, was agreed upon, for the further development of East Kaimie Mine. These new shares were all taken up by the original shareholders. The quantity of ore now raised has been considerable, and the prospects of the mine are so encouraging that our committee are of opinion the time has now arrived when the capital should be so increased that machinery may be erected, by means of which the mine may be more effectively wrought, new ground opened, and the manager enabled to increase the quantity and improve the quality of the ore. A short statement of what has been done in the nine months during which the works have been in operation may be serviceable. The cross-cut, or adit level No. 1, has now been driven up to the road and under the old workings (485 fms.), where a shaft has been sunk 4 fms. through rich grey ore, close to the road, and adjoining the dressing-floors, by which means the ore can be brought to the surface at much less expense than formerly. This No. 1 adit has been driven along the east and west lode, through rich grey copper ore, and a large quantity of valuable ore has been raised from it. Various cross-courses (north and south) have been met with in driving. They yielded rich ore at the points of intersection, but are yet to be developed. The great and west lode of the old workings has just been driven under, so that operations can be commenced immediately upon the lode, there being 12 ft. of ore between the old workings and the present level. A deep adit was commenced some time ago, which, when driven under our present workings, will unwater them, as well as give 60 ft. of ore to be cut down from all our present known lodes. The advantage of this can scarcely be estimated, more especially as the ore has always been found richer in depth. In course of driving the deep adit it is expected that other lodes may be discovered in the hitherto unexplored ground. Sinking was tried upon the great No. 2 lode, and the ore was found to be exceedingly rich; but having gone down about 10 ft. the work had to be stopped, from want of ventilation and an engine to pump the water. We have no hesitation in coming to the conclusion that we have a valuable property, only requiring the application of machinery and proper development to make a good dividend mine in a very short time. The silver contained in the ore (for which we have hitherto got little or nothing from the copper smelters), if we adopt some patent process of reduction, has been calculated to give an sum equal to the expense of reduction to the state of copper regulus. In this way, too, a very large saving of carriage would be effected, and a better proportionate price would be obtained. For machinery we have the benefit of good water-power, should that be preferred to steam, and the ground is peculiarly favourable for allowing adits to be driven at still lower levels than the present ones. After a careful consideration of the money expended in developing the mine, and of all that has been done to prove the value of your property, and having in view the intention to extend the operations of the company, and for that purpose to increase the capital, we would recommend as follows:—That the number of shares be increased from 256 to 1536. The interest of the present shareholders to be repaid by 1204 shares. Thus leaving 312 (3*l*.) shares to be offered to present shareholders; and if the same are declined, or not taken up, on or before Nov. 13 next, the same, or any portion of them, in the discretion of the directors, to be offered to the public. The calls, in any case, to be paid by instalments—2*l*. on allotment, and the balance in such sum or sums, and at such time or times, as the directors may see fit. Considering the present state of the mine, and its proved capabilities, your finance committee, in conclusion, have great confidence in recommending to the directors the adoption of the plan now proposed.—JOHN BUCHANAN, WM. FRASER: Glasgow, Nov. 1."

STATEMENT BY THE DIRECTORS TO THE SHAREHOLDERS.—"The preceding report by the finance committee has been adopted by the directors, who have much pleasure in stating that it is now more than borne out by the result of the sale at Swansea of cargo per *Mary Jones*, on October 29:—

36 tons 5½ per cent. copper, at £4 17 0=	£174 12 0
26 tons 5½ " " " " " " " " " "	129 7 0
13 tons 10 " " " " " " " " " "	123 10 0=
	£427 9 0

And also by the letter from Messrs. Henry Bath and Son, dated Oct. 31, giving an analysis of the ore, and the result of the assay, as follows:—77 tons of 5 per cent. copper, 3·91 ozs. silver per ton; 14 tons 10½ per cent. copper, 7·83 ozs. silver per ton.—DAVID LAIDLAW, Chairman: Glasgow, Nov. 4."

ASSETS.—Bills from H. Bath and Son, not yet come to maturity.....	£ 62 12 6
Balance receivable from H. Bath and Son for ore sold, say.....	150 0 0
Estimated value of 95 tons, per <i>Lady Fielding</i> , and about 85 tons dressed at the mine.....	800 0 0
Ditto of low-priced ores on the mine, valuable only after machinery has been erected, say.....	800 0 0
Total.....	£1812 12 6

LIABILITIES.—Amount at debit of mine, as at this date.....	£207 14 8
Cash paid for October, 1861, say.....	250 0 0
Liability on ores, say.....	100 0 0=
	£557 14 8

NOTE.—In the above estimate there has been no valuation put up on anything but ore, and there remains to be added the present value of the mine, including plant, &c.

Though this statement gives a highly gratifying proof of the value of the property, yet it does not render the quantities of the ore produced or the prices realised by the parcels hitherto sold; suffice it to say, the first shipments were from ores raised close to the surface, contaminated with iron, gossan, and gangue, no appropriate dressing apparatus being at that time provided; consequently, the percentage was low, and the prices, of course, discouraging. Now, however, a new era dawns; the mine has for the last two months made a profit of above 150*l*. per month, and will double these returns in a brief period. Nearly 500 tons of ore have been sent off, a large quantity is at the surface on the mine, the reserves to be stopped are considerable, whilst the ore gone down in the bottoms appears likely to last for very many years' exploration.

At the late meeting the Chairman said that he had pleasure, in meeting the proprietors, to state that the Lochwinnoch Consols afforded a rare example, by fully equaling the promises of the promoters, and exceeding the most sanguine expectations of the directors. He himself had been sceptical, but now felt convinced, more especially as he had lately been in Cornwall, visiting a mining property in which he held an interest: they had there been at work four years, had expended thousands, and had on ly just produced a stone of copper. These facts should surely convince Scotch gentlemen that at home they have mines equally valuable to those in other districts, provided mining were encouraged by trial and confidence: these must be united, or neither will prosper. The Lochwinnoch Consols are the only mines that have had sufficient trial and time allotted to them to enable one to speak definitely as to their true value. That value is partially proved by the great demand for shares in the undertaking at extremely advanced prices; in fact, there are now few or no original shares to be purchased.

The next mine to which I would draw your readers' attention is the WEST KAIMIE MINE. This mine is on the same lodes as the Lochwinnoch Consols, has been worked only four months, by eight gentlemen as a private speculation, has sold two parcels of ores at prices varying from 9*l*. to 5*l*. per ton, and has another parcel ready for shipment. The mine has yielded a profit from the commencement; this profit has been applied (very properly) to further development, and not to dividend. I hesitate not to say that this property will equal, if not exceed, its prosperous neighbour, as soon as opened out, as the sett extends half a mile on the course of the lodes, or nearly twice the distance of the Lochwinnoch

Consols, and the lode has been proved the whole way. My advice to this company is,—Throw your company open, extend your workings, like your fellows, and you will soon give another and substantial proof that there is indeed copper in Scotland that will pay for exploring and working—aye, and yield a revenue worthy a dukedom.

These, Mr. Editor, are the proofs, certainly not bad ones, that where there is a will there is a way. These companies were the first in the field. I am happy and proud that they have been so eminently successful. During the year a great many new companies have been formed, under most excellent auspices, introducing valuable setts, that have never, or only partially, been developed. Amongst these are the CALDER GLEN, where, after considerable delay and disappointment, a fine copper lode has been cut. At GOUROCK COPPER MINE great activity and determination is displayed. In the Western Highlands, and in the neighbourhood of the fortunate mines above alluded to, measures are being matured for an active campaign in the spring, particulars of which will be duly published.

In the mean time, allow me to say that copper mining in Scotland has advanced with rapid strides: the viper Prejudice has been scotched, not killed. I hope next year that I shall be enabled to report its entire extinction, and Scotland's triumph.

GEORGE HENWOOD.

#### REPORT ON CORNWALL AND DEVONSHIRE.

[FROM OUR CORRESPONDENT IN TREBO.]

Nov. 14.—The present tone of speculative mining in Cornwall is dull—very dull. During the last two years an undue number of new concerns have been attempted to be started, many of which, involving the reopening of old mines, have turned out a heavy drag upon the shareholders. In the case of those that are the best supported, the struggle to maintain the confidence and spirit necessary to meet heavy expenditure in depressed times has been a hard one, while with regard to those that have been feebly or inadequately supported the result has necessarily been abandonment in an early stage, after an expenditure utterly fruitless, because it has proved nothing. In the necessary course of things, and under the best advice and best management, a considerable proportion of mining adventures must end in failure; the highest judgment and skill cannot be secure against disappointments and failures. Where, however, the expenditure has been judiciously made, and every fair chance has been fully tried, although the result may have been failure, the amount expended cannot be said to have been wasted. On the other hand, where a great expenditure has been gone to without any adequate trial having been made, in consequence of a failure in the means or spirit of the shareholders at a trying moment, the result is an absolute waste. One or two failures of this kind have occurred within the last year or so, which ought to teach caution, and show us that it is easier to talk about working large concerns than to carry them out actually to a successful issue. That such is the feeling in Cornwall at present there can be no doubt, and consequently, there is no great zest for entirely new concerns. And this feeling is a very healthy and sensible one. There are quite mines enough working in West Cornwall, having regard either to the supply of labour or capital. When some proportion of the large number of "progressive" mines now in operation has been brought to a successful issue it will be quite time enough to put a new lot to work. At present capital can be better expended—both in the interest of speculators and in that of the country—in working out concerns upon which considerable sums have already been expended, than in bringing entirely new competitors for capital into a market already glutted. There are numerous promising mines—mines which have excellent chances of success—which are languishing for want of new blood and additional capital. Many of these are selling in the market for but a fraction of what has been expended upon them; and surely these must, at such prices, be better speculations than entirely new adventures, offering no better intrinsic chances, upon which everything has yet to be done. Still the general public do not seem to see this. Their principle seems to be to reverse the popular doctrine of political economy—"to buy in the cheapest and sell in the dearest." When things are dear they run after them, and when they are cheap they will not touch them. If you ask them to pay 5000*l*. or 6000*l*. premium for the privilege of speculating on the re-working of an old mine, which it will probably cost 50,000*l*. to put in fair working order, it is not unlikely that they will jump at the offer; while a couple of years afterwards, when possibly 30,000*l*. or 40,000*l*. has been spent, and the concern is really in a fair way to become a property, it is more than probable you cannot sell a share at half the value of the materials, and the mine may absolutely stop without having received any effectual trial, for the want of a small proportion of additional capital, while four or five times the required amount is readily found for another new concern, with no better intrinsic prospects; which, in its turn, may be left to languish at the very time when it ought to be most vigorously pushed. As a general rule (there is, of course, no rule without some exception), the object of everyone connected with Cornish mining should be to carry out the trial of the concerns already at work. For speculators it is evidently the best policy, for as a large proportion of these are now selling very low, the chances are infinitely in favour of those who come in at such reduced prices.

Among concerns which, with a small outlay, have so far arrived at a good success, I may mention two small tin mines—Wheal Grylls, in Penrynshire, near Marazion; and Wheal Basset and Grylls (formerly Forkellis United) in Wendron.

The workings at WHEEL GRYLLS are on three distinct lodes, two of which lie to the north of the Helston and Marazion-road, and one to the south of it: those to the north of the road are—1, Fisher's lode, on which the engine is erected, and which is the main lode in the adjoining mine of St. Aubyn and Grylls; and 2, the Standard lode, the same as that worked in the adjoining sett of Mill Pool. The Standard lode runs very nearly east and west, to which Fisher's lode is a caunter, bearing about 40° to the south of east; they both underlie north. The lode to the south of the road is called the Georgia lode, and is very peculiar, the portion already opened out having a bearing nearly north and south, and the general characteristics of a carbona. The Georgia lode has been opened on at the back of the adit level, which, coming up from the sea, is here 40 fms. deep from surface. The "old men" wrought the same shoot of tin now working from surface to the depth of 20 fms.; but in modern times, although the ground has been worked more than once, the continuance of this shoot of tin, although lying above an adit, was never discovered until quite recently; and a very good discovery it has been, for a splendid piece of tin ground has been laid open for about 20 fms. in length, going down regularly in the bottom for about 14 fathoms long, valued at 30*l*. per fathom on an average. During the last month 12 men stoping here raised about 700*l*. or 800*l*. worth of tin—the lode at some points producing very rich work, 2 tons 8 cwt. 3 qrs. 2 lbs. of which was bucked down last month, and sold at the smelting-house for 54*l*. per ton. The main workings are on Fisher's lode, where the adit also comes in 40 fms. deep. Below this adit Annie's engine-shaft is down 2 fms. below the 20 (drained by a 41-inch engine). The sinking is at present suspended in consequence of a new 12-in. box being in course of fixing. In the bottom the lode is split, but the north part, which is in the shaft, is worth 18*l*. per fm. for tin. The 20 is driven both ways; the west end, driving towards some land recently in dispute, is suspended; the lode is tinny, but not rich. The level made a good lode for 7 fms. long, and will, of course, be continued when the past disputes, now in course of arrangement, are finally settled. East of Annie's shaft the 20 is driven about 30 fms., where it has just been holed to a winze from the 10 fm. level; for this length the lode will all come away for stamping, but is as yet untouched, in consequence of the stamps not being yet erected. The flat-rod shaft, also on this lode, about 80 fms. east of Annie's shaft, is likewise down to the 20, below adit, at which level the ends are driving east and west. On the Standard lode little is now doing, for the workings are near the boundary of the disputed ground; it is, however, a very promising lode, and when worked affords every prospect of doing well. Unfortunately there are as yet no stamps on this mine, so all the stuff has to be sold to the tin buyers in the stone. The loss on this mode of disposing of the produce would be greater than it is if it were not for the rich quality of the work from the Georgia lode. A stamps (32-inch engine, working 24 heads) is, however, now in course of erection, and will be at work early in the coming year. It is being put up on the Georgia lode, so that a flat-rod may be attached to the engine to sink down on the rich shoot of tin.

I have referred to certain disputes respecting a portion of the ground formerly included in this sett. I am happy to say that these differences, and, indeed, all other differences at Marazion, may be said to be now at an end. This will be a great matter, not only for this mine but the district in general. As I have already said, we do not want any more new mines at present in West Cornwall; but in this district there are one or two matters which require new blood and additional capital to bring them to a probable successful issue; and now that harmony is restored, that capital will be much more readily forthcoming. One mine in particular, Wheal

Caroline, upon which an engine has been erected, but which is now idle, ought to have a vigorous trial.

The following are the sales of tin in the stone at Wheal Grylls for the last six months:—

June 7 .....	£ 579 6 2	Sept. 13 .....	£1104 4 4
July 12 .....	838 0 8	Oct. 11 .....	759 4 4
Aug. 9 .....	302 7 5	Nov. 8 .....	1163 0 0

This last sale has left a profit of some hundreds on the month's working cost. The agents at Wheal Grylls are Capt. Edward Rogers and James Pope, to whose skill the present success is mainly due.

WHEEL BASSET AND GRYLLS adjoins Wendron Consols on the north. The old mine and materials were purchased not very long ago by Mr. T. P. Tyack (the present Mayor of Helston), the pursuer of the mine, the management being placed in the hands of Captain Wilken. The workings on the old mine had to be entirely remodelled; a 60-in. engine had to be removed, and two new shafts sunk: 7000*l*. has been called up, with which the machinery has been paid for, and the greater part of this work done; so much, at any rate, that no more money will be required of the shareholders. The happy result has been chiefly brought about by the opening of some rich south lodes, called Wheal Fat lodes, near the Wendron Consols boundary, by a flat-rod from the stamping-engine. The workings here are now only down 28 fathoms from surface, and from this the returns now amount to 20 tons of tin per month, worth on an average 70*l*. per ton. This is a splendid result for such a small working so near the surface, and shows what can be done in the Wendron district by those who properly understand it. By the aid of this discovery the old mine will be opened out and put into working order; when, if it produces anything like the quantity of tin it did in former times, we may expect to see Basset and Grylls second to no mine in Wendron. The very greatest credit is due to the pursuer, Mr. Tyack, and to the manager, Captain Wilken, for this result. Those who knew Captain Wilken best never doubted that good results would follow from whatever he carefully undertook; but such a speedy result as has been attained in Basset and Grylls could not reasonably have been looked for.

With regard to the present state of Cornish mining, it is best for every one interested that whatever capital is available should be directed to the vigorous prosecution of the progressive mines at present in operation, rather than that a lot of new concerns should be brought on the market, which does not seem at present able to supply adequate money for those at present at work.

#### REPORT FROM NORTHUMBERLAND AND DURHAM.

Nov. 14.—The Coal Trade continues pretty firm, if not brisk, and when a change does take place for the better with respect to the general trades of the district, will no doubt spring into great activity. The new winning at Seaton Delaval is to be got into operation during the present week. The workings are so far extended as to provide room for 100 coal hewers, with which the start will be made with this magnificent and in many respects model colliery. The heap framing and gearing is composed entirely of girder iron instead of wood, the usual material. The winding-engine is a most gigantic one, capable of lifting a large quantity of coal, perhaps a greater quantity than any previously erected. When the colliery is fully developed it is intended to work, screen, and send away 40 keels of large coals per day, or 848 tons—perhaps a larger quantity than has hitherto been sent from any single pit. A new shaft is to be sunk at the Shield Row Colliery 13 feet in diameter. A new shaft is also to be sunk at the South Derwent Colliery. The exports from the north-east ports during last month were 426,120 tons, against 303,373 tons in October of last year, thus showing an increase of 122,747 tons.

It appears that the Lords Commissioners of the Admiralty have accepted the tender of the Consnet Company to supply a quantity of heavy iron, of the largest size yet made, and flat iron, for the *Achilles*, armour vessel, building at Chatham. This gratifying circumstance derives additional interest from the fact that the building of the *Achilles* has been seriously retarded through the rejection, on the part of the authorities, of large quantities of iron, supplied, we understand, from a noted South Country firm, on the ground of its not fulfilling the requisite conditions as to quality. We also understand that the Consnet Company, in consequence of the Admiralty recommendation, have just had an enquiry from an eminent Scotch builder respecting the supply of iron Government vessels. In addition to the above, they are engaged in two large contracts for plates for Government vessels, the angle iron for which they have already supplied.

The North-Eastern Railway Company intend to apply to Parliament in the ensuing session for power to construct the Team Valley line, which will afford a direct route from Newcastle to Durham and the South. This line will be of great advantage, as it will relieve the enormous traffic on the present route by Pelaw Main, Victoria Bridge, &c. It will also open out a new route for the coal traffic from several collieries, which they may possibly avail themselves of.

At the meeting of the Northern Mining Institute, on Thursday last, there was a large attendance of members; among those present, besides the President (Mr. Wood), were Mr. T. E. Forster, one of the vice-presidents of the Institute; Mr. Dunn, Government Inspector; Mr. Boyd, Mr. T. Y. Hall, Mr. Berkely, Mr. Crone, Mr. Darglish, Mr. Southern, Mr. Marley, of the Cleveland district, &c. A paper was read by Mr. Gibson, on "The Canobie Coal District." It is a lengthy paper, and one of a very interesting kind: from the number of facts contained in it, sections, &c., it will prove highly useful. It embraces a large extent of country, and gives many geological facts, &c. The district itself is very peculiar, and much remains it appears to be explored in order to arrive at any precise knowledge of its mineral riches. Some borings have been made, and some are now in progress, in order to prove the strata—that is, in reference to coal particularly. With the opening out of railways, the Canobie coal field and the Plashetts will gradually become of great importance, and hence this and similar papers will furnish information of the most valuable kind to owners of estates and explorers. The paper of Mr. Gibson has some reference to the tract of country treated of by the paper of Mr. Dunn on the "Cumberland Coal Field;" and, again, the paper of Mr. Boyd treats of a country occupying a position north and east of the former. The discussion of the paper of the latter gentleman was postponed mainly on this account, it being thought advisable to take the discussion on all the three papers together, when the members have had an opportunity of comparing the papers, and studying their general features. A paper was also read by Mr. Atkinson, on the "Performance of the Elsecar Ventilating Fan." The result of the trials of the power of the fan appears to show that it is capable of impelling a large quantity of air through the workings of that colliery, as much as 74,000 cubic feet per minute having been got in the aggregate; but the small amount of water-gauge also shows that the airways are very spacious, and comparatively short. The writer states that the consumption of fuel is less in the case of the fan than it would be if a furnace were used to produce the same amount of ventilation—the depth of the shaft being 60 fms., and consequently unfavourable to the furnace. The account given in the paper of the different experiments was very interesting. One experiment appears very important—the shaft was shut off and the fan worked, when the amount of water-gauge even then was small, much less than produced by a furnace, so that it is probable, if not certain, that the latter is much better fitted for overcoming the drag in a very extensive mine, with long air-courses, than any description of machine. But further experiments are to be made, and, no doubt, shortly more definite results will be arrived at respecting the merits of the different modes of producing mine ventilation. When the performances of various machines are recorded and compared, it will be seen what their real merits are, and when those are compared with the performance of the furnace the real merits of the two modes will be arrived at, and some results given, which it may be hoped will serve as a guide to managers of mines throughout the kingdom.

#### REPORT FROM YORKSHIRE, DERBYSHIRE, AND LANCASHIRE.

Nov. 14.—Notwithstanding that the manufacturing trades of the country are unusually depressed, and that the prospects of a settlement of the unfortunate war in America are very remote, a gradual improvement has taken place in the Iron Trade during the past fortnight, which enables the makers of first-class brands of iron to keep their works in full operation. The manufacturers of second-class iron are only moderately supplied with orders, and complaints are very prevalent amongst them of a considerable amount of underselling taking place. The iron trade in the northern parts of Yorkshire is improving, but the demand is chiefly for the Baltic and German ports. We announced the failure last week of Messrs. Bedford, Bury, and Co., of the Regent Works; and this week we have to announce the failure of the Midland Iron Company, at Rotherham. The liabilities of the company are not yet stated, but a meeting of the creditors was held at Leeds on Tuesday, Mr. Jas. Morrison occupying the chair. Mr. Abbott, accountant of Sheffield, submitted a statement of accounts to the meeting, and a composition of 7s. 6d. in 1*l*. was offered, but not accepted, principally because it was not known in



what way the parties would be affected by the operation of the New Bankruptcy Act. The Steel Trade is improved, and a large firm in Sheffield have received a good order from the Government for armour-plates for ships of war. The cutlery trade is very much depressed. An important meeting of manufacturers was held in Sheffield on Wednesday, on the subject of the Great Exhibition, and the contributions which Sheffield should forward to it. The total number of applicants for space was 126, and the amount of space applied for 15,474 feet, whereas the amount of space allotted was only 2410 feet of floor space, so that the committee were at a loss how to accommodate the requirements of the local exhibitors. It would appear, from a list we have seen of intending exhibitors, that the manufacturers of Sheffield will be well represented. We are to have cutlery and hardware of all descriptions, specimens of heavy castings, steel bells, stores, and tools of various descriptions. Mr. Sealey, one of the proprietors of the extensive collieries at Birchwood, near Alfreton, Derbyshire, has been elected M.P. for Lincoln. Another remarkable and beautiful specimen of wrought-iron has just been produced by the Buttery Company, at their iron-works, near Alfreton, consisting of bar-iron 11 in. wide rolled in grooved rolls. These bars were required in various lengths up to 47 feet long. These they resolved to roll in one length, in which they have succeeded in the most satisfactory manner; and one 57 feet has been produced, 11 in. wide by  $\frac{3}{4}$  in. thick. The bars are rolled off without the process of re-heating.

The recent change in the weather has given a great impetus to the Coal Trade, and the demand has considerably increased, both for home and foreign consumption. The completion of the Worcester and Hereford Railway has opened a through communication with South Wales by the narrow-gauge, and has brought the steam coal of Wales into communication with that of Derbyshire. The subject is exciting a large amount of interest at the present time amongst coalmasters, who anticipate that half of their trade will naturally go into Wales. Various calculations have been made as to the cost of taking the two coals to Worcester, and it has been found that the Welsh coal could be delivered at Worcester about 6d. per ton cheaper than the hard coal of Derbyshire. However, at present there is no need to fear that the Welsh coalmasters will take much of the Derbyshire trade, or be able to have a monopoly of the article. The celebrated main coal of Clay Cross has attained such a decided position in the London market that the supply from the collieries is going to London, and until that market is satisfied no other can be supplied. During the past few years the production of coal at Clay Cross has been increased threefold, and the production is still increasing.

A very singular accident took place at the new Hollingworth Colliery, Staveley, the property of Mr. Richard Barrow, by which a miner, named Thomas Welsh, lost his life. The men had left work about half-past five o'clock in the evening, and about a dozen of them rushed to the bottom of the shaft to get upon the chair, and eight persons did get on, six being the number allowed by the colliery rules. The hanger-on asked two of the persons to get off, but they would not, and he pulled two off. Just as he had done so a train of loaded wagons was heard coming down the incline to the pit bottom, when the hanger-on called out for the men to leave the chair, but they would not, and the wagons ran into the cage, and the deceased was so badly crushed that he died on the spot. It was supposed that in the struggle to get the two extra men off the steps or brakes had got misplaced, and that the wagons ran into the cage in consequence. An inquest has been held on the body, and a verdict of "Accidental Death" returned. Mr. Hedley, the Government Inspector of Mines, was present. On Saturday an accident happened at Mr. Sealey's colliery at Birchwood. Two men were employed to sink the shaft deeper, and about one o'clock in the morning they were being drawn up in the chair, which caught a prop of wood that had been placed to steady some air-pipes, when one of them fell out and was killed. There were no conductors in the shaft, and the chair swayed very much. The jury returned a verdict of "Accidental Death," and the fellow-workman of the deceased, who had a narrow escape, thought no one was to blame.

The Mill Dam Company had a large measure of ore last Friday, and the mine is doing well. The Mill Town shaft at Ashover is not yet through the tondstone. The shareholders of North Derbyshire are clamouring loudly on the position of this property, and it would be advisable for the directors to call a meeting to explain the position of the company's affairs. The Prince of Wales Mine is said to contain gold in the quartz, and that a machine has been bought for crushing and extracting it. We have no faith in Derbyshire gold mines.

#### REPORT FROM MONMOUTH AND SOUTH WALES.

Nov. 14.—The trade of the different ports generally decreases on the advent of winter, but this year there is every prospect of the dreary months bringing with them increased confidence and activity in commercial matters. At Newport particularly there has already been a great improvement felt. The docks are fuller than has been the case for many months, and, coupled with this, freights are high, with few exceptions. A meeting of the Harbour Commissioners was held on Saturday (the Mayor in the chair), for the purpose of appointing three commissioners, according to the Bristol Channel Pilotage Act. The election fell on Mr. T. B. Batchelor, Capt. Foote, and Mr. Robert Gething (harbour-master). The Dock Company have appointed Mr. Anstice (the deputy dock-master) their representative at the new pilotage board. There is no alteration to be noticed in the trade of Cardiff. There are a large number of vessels in the port, but business is dull and unsteady. Swansea retains its wonted activity; and Llanelli, if it continues to improve as at present, will soon be one of the most important ports of the channel. The late gale has caused considerable destruction amongst the shipping. The *Gipsy*, of Newport, bound to Liverpool with iron, has been lost; both ship and iron were the property of Mr. Crawshaw Bailey, M.P., and the loss, independent of what is covered by insurance, will be about 2000*l*.

At the Merthyr Police Court, on Saturday, before Mr. J. C. Fowler (attending magistrate), an important case, affecting colliers, was heard. John John, a collier, in the employ of Mr. Anthony Hill, at the No. 2 North Duffryn Pit, was charged that he did on Nov. 2 carry into the works, beyond the place where prohibitory notices are set, combustible materials,—to wit, lucifer matches and powder. There was also a second summons, charging him with firing a shot in the same work, the overman or fireman not being present, contrary to the printed rules set up in the works.—The defendant pleaded guilty to both charges, but said that he had waited from two o'clock till five for the overman; that he had sent for him several times, but he did not come; that it being Saturday night, and believing that by Monday the powder would spoil, he fired it. There was no danger in his doing it than if the overman had been there.—Mr. Leverick, the viewer, said it made no difference in the offence if he had sent twenty messages. The rule was plain, and he could not allow the men to take such liberties. The pit was one that generated a great quantity of gas, and it was necessary to make an examination with a safety-lamp before any shots were fired. The defendant was a steady, good workman. He had been in his stall the day before; it was clean, in good condition, well tempered, and in every respect in a satisfactory state.—Mr. Fowler said he had waited for the defendant to urge something as an excuse, but he had not done so, so he had no hope from the Bench; and though the viewer said that if he chose to risk their own lives, the law would not allow them to imperil the lives and limbs of others. He (Mr. Fowler) did not think defendant could be aware of the punishment he exposed himself to; he was liable to be imprisoned for three months. He very much disliked sending steady, well-behaved colliers to prison; but he sat there to administer justice, and although he did not intend to send him for anything like the full length of time, yet the interests of the workmen must not be lost sight of. By his conduct defendant might not only have blown himself to pieces, but also have involved his fellow-workmen in a like calamity. He should not, therefore, be doing his duty otherwise than in sending him to prison for ten or twelve days, in consideration of his good character, he should not sentence him to hard labour.

On Monday, an inquest was held at the Lewis Arms Inn, Loughor, on the body of Thomas Harris, collier, who was killed at the Tychon Colliery by a fall of coal. The jury, after hearing the evidence, returned a verdict of "Accidental Death."—On Tuesday, an inquest was held at the Lamb and Flag, Merthyr, before Mr. Morgan (the deputy-coroner), on the body of Walter Lloyd. Deceased was a collier, working at one of the Cyfarthfa Pits; and while he was engaged in his usual avocation on the previous Thursday a large stone fell upon him, and he received some severe injuries, which resulted in death. Evidence was given to show that the men were always supplied with timber, and the overman and fireman used every diligence in looking after the workings. The jury returned a verdict of "Accidental Death."—On Monday, part of a level fell in at one of the Cymmer Collieries, the property of Mr. Richard Ellis, of Cardiff. Seven men, who were working in the level, were killed by the debris. Assistance was immediately procured, and an entrance made to the level by sinking a cutting from the next level, and the men were soon extricated from their perilous position. A considerable amount of damage has been done.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Nov. 14.—The Iron Trade is, on the whole, tolerably active. Most of the makers of finished iron are fairly supplied with orders, and though parts of their works are sometimes standing, yet, considering how many circumstances exist of a depressing character, the state of the iron trade is far better than could have been anticipated. Pig-iron is not being much sold at the present moment, but prices are firm, and the inferior kinds of pig are in better demand. This arises from the increased use made of hematite pigs in the district, as inferior native pigs are required to mix with these. Messrs. Schneider, Hannay, and Co., of the Barrow Works, have this week blown in another blast-furnace, making five in all, and which yield a very large make of pig-iron. The make of this company has been sold considerably in advance this quarter, and the hematite pigs generally command a good sale. Mr. S. Griffiths started one of the Bilston Brook furnaces last week, and two others are being prepared for the blast. Coal and ironstone are in fair demand, and the latter is somewhat higher in price.

The Hardware Trades of South Staffordshire continue quiet. The Australian letters to hand to-day describe the commercial aspect there as exceedingly depressed. Stocks are heavy, and selling off at ruinous prices.

In answer to some enquiries as to the "desulphurised iron" advertised by the firm of E. B. Thorneycroft and Co., of which Mr. Samuel Griffiths is the leading partner, little is known in South Staffordshire beyond the fact that the iron has acquired the reputation of being of superior quality. Mr. Griffiths has not disclosed the secret of the "chemical mixture," which, as stated in the advertisement, is employed for the purpose of desulphurising the iron, and until he reveals its composition it must be left to the ingenuity and skill of the metallurgical chemists to discover its nature.

The Local Commissioners in Wolverhampton for conducting arrangements for that town in connection with the Exhibition of 1862 have received a communication allotting them 1060 square feet of space, in place of 3529 feet, for which they had applied. They are, however, informed that a considerable increase of exhibiting space can be secured by employing vertical cases or screens, rising above the objects on the floor. For objects which can be suspended there is, literally, no limit to the space available.

A Sheffield correspondent of the *Birmingham Journal* notices the facility with which, in France, the piracy of trade marks can be prevented. Messrs. Rodgers, of that town, have already several times successfully appealed to the French law in order to prevent such imitations. The English manufacturer desiring to avail himself of this protection has, in the first instance, to register his mark at Paris, and when he finds any one pirating it takes one of the articles bearing a copy of his mark to the Tribunal of Commerce and proves its purchase, when an officer is at once sent to the premises of the offender, and the whole of the goods so marked are seized and confiscated. A second offence subjects

the offender to six months' imprisonment; the necessity for resorting to this, however, but seldom arises.

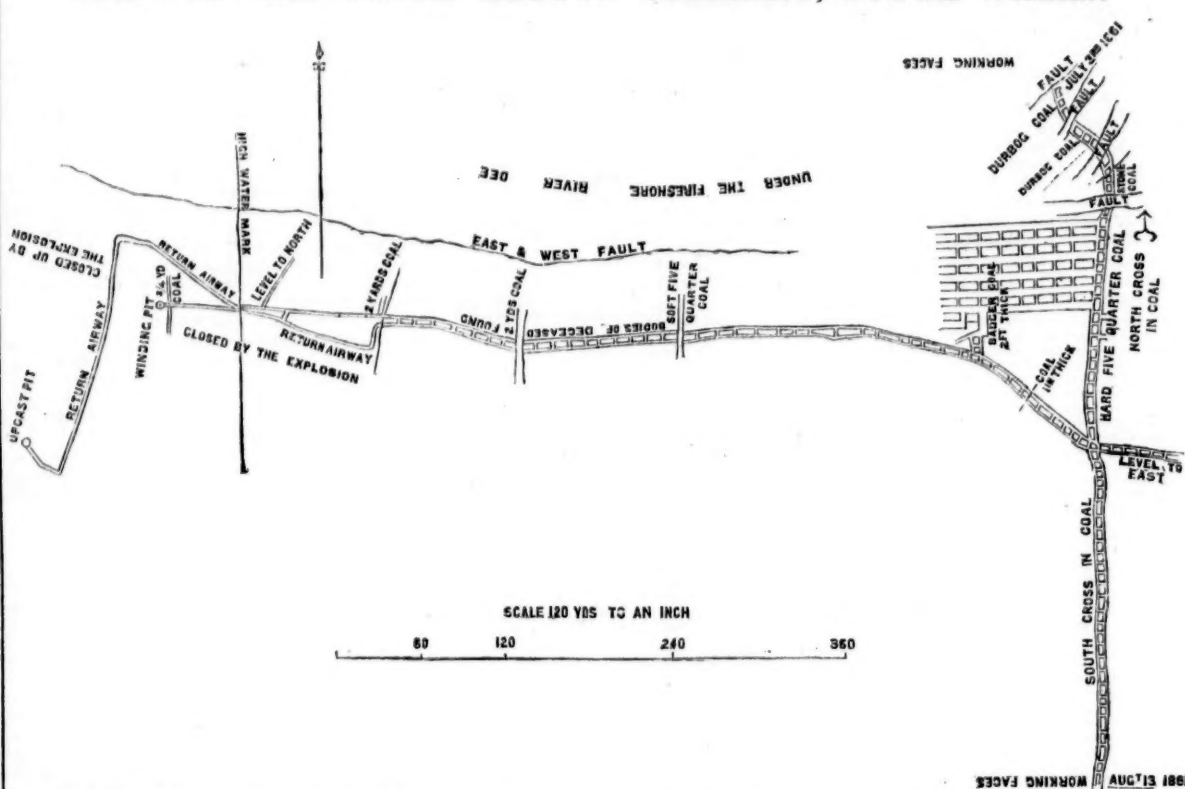
The general meeting of the Institution of Mechanical Engineers was held at Birmingham, on the 7th inst.—Mr. Sampson Lloyd, of Wednesbury, presiding. Amongst the papers read was one by Mr. Charles W. Wardle, of Leeds, the subject being "An Application of Giffard's Injector as an Elevator for the Drainage of Pit Workings." The employment of the injector took place, at the suggestion of the author of the paper, at the Kippax Colliery, near Leeds, for the purpose of draining a portion of the mine which lay below the main drainage level, and at a considerable distance from the shaft. The elevator applied consists of a simple form of the injector used for feeding steam-boilers, in which the steam and water orifices are fixed at the position suitable for the height of lift and pressure of steam, no adjusting handles or valve being used. The steam is supplied from a boiler at the surface of the ground, and is conveyed by a  $\frac{1}{2}$ -in. gas-pipe down through the pit to the elevator, at a total distance of more than 1000 feet from the boiler; and the water is delivered up an incline-pipe from the elevator for a distance of 300 feet, being raised a height of 27 feet. In order to separate the steam before it enters the elevator from the condensed water produced by its passage through the long length of steam-pipe, it is passed through the top of a depositing box, in which the condensed water collects, and flows thence into a self-acting water-trap, by which it is discharged at regular intervals. This serves quite sufficiently for keeping the steam supplied to the elevator free from water, and the elevator continues working uninterruptedly for many hours together; and when the quantity of drainage water is sufficient, it works continuously day and night without stoppage. It does not require any attention in working, and is started by simply turning on the steam at the boiler at top. The elevator has now been at work at this colliery with complete success for several months past, and has proved a simple and efficient means of drainage;

and, although far from an economical application of steam, is less expensive in this instance than any other plan, since the fuel employed for raising the steam is only refuse slack from the pit, for which there is no other use, and no other cost of working is incurred. The elevator is now being applied also for raising the water supplied for cooling the tuyeres of blast-furnaces, and is in use at other works for filling up the water tanks during the night for the day's supply, making use of the waste steam previously thrown away from boilers heated by forge-furnaces. It avoids the liabilities to stoppage attending the working of pumps, and is not injured by frost, but gets thawed by the heat of the steam, and quickly starts working, even when it has been completely frozen up.

The new Joint-Stock Bank at Birmingham has proved a complete success, so far as the raising of capital is concerned. There were 4000 shares to be allotted, and the number applied for was 12,000, or three times the quantity to be disposed of, the applicants numbering 400. The allotment will take place immediately, and the election of a board of directors will, no doubt, very shortly follow.

A project is on foot for connecting Stafford with Uttoxeter by a railway, which would thus unite the Shropshire Union and main London and North Western Railways, at Stafford, with the North Staffordshire at Uttoxeter, and by means of it with the Midland Railway at Burton. At present the only railway communication between Stafford and Uttoxeter and that part of the county is by the circuitous routes of Stoke and the North Staffordshire line, or Lichfield and the South Stafford. The country between Stafford and Uttoxeter is agricultural, but the proposed line would very much shorten the journey from Derby to the West of England and to Wales. Another proposal for effecting the same result is by a railway from Rugeley to Uttoxeter, which would be a continuation of the recently-formed line from Walsall to Rugeley. This would be the shorter piece of railway to make, but would be considerably less direct from Stafford.

#### PLAN OF THE SOUTH MOSTYN COLLIERY, SOUTH WALES.



The inquest upon the sufferers by this casualty was resumed at the Honest Man Inn, Mostyn, on Wednesday, before Mr. P. Parry, the coroner for the district, Mr. Ellis Eyton, of Flint, watching the proceedings on behalf of the proprietors of the colliery. The depositions were read, when Mr. E. EYTON asked whether the enquiry could be concluded that day; it was his wish to bring forward all the evidence possible, but trusted it would be closed that day.

The CORONER would be glad to close the inquest that day, if compatible with justice.—Mr. P. HIGSON, Government Inspector, said the evidence of a man who was at work at the Dwrboeg Mine was first required.

ISAAC DAVIS, collier, sworn: He was working there the day before the accident, and came up between five and six p.m. Was overlooper of the labourers in the South Mostyn. He was helping the labourers, repairing the rails. There were eight at work there. He left six men behind him when he came up. Jacob Hughes came up with him. The ventilation was the same as usual when he left. The state of the ventilation was usually good. The whole six who came up were still alive. There were two in the five-quarter coal. The pit is 140 yards deep. He was working in the south side of the tunnel. He did not go to the end that afternoon. He only went within 40 yards of the end of the tunnel.

MR. HIGSON: We want now to know how the ventilation was in the workings? OWEN WILLIAMS, collier, of Rhewl, sworn: He was working in the Dwrboeg Mine on the north side of the tunnel, and went to the extreme end of the workings the afternoon before the accident. He came up at 10 p.m. on the night before. He worked in the upper level, and his partner on the lower. The state of the ventilation was the same as usual. He had finished his stem, during which he had managed to work very well. The air was good. The gas came off rather strongly from the face of the workings. There was sufficient air to dilute the gas, so as it would not fire in the lamp. There was no show of gas in the lamp on that evening. He particularly noticed this. He tried it with the lamp. He was not aware of gas showing in any other part of the mine. He and the rest came to the pit eye together; four came up and then the others. They are all living. He had found gas in his working place, but had never seen it accumulated. He never went to any place to the whole work.

MR. HIGSON: His was no doubt, the most likely place to find gas in.

O. WILLIAMS continued: His lamp was locked before he went down on this occasion. HUGH WILLIAMS, collier, of Nant, sworn: He was not working at the forebreast of the east tunnel, on the Tuesday. He was not down since the Monday before the accident which occurred on Wednesday. No one had worked there after him previously to the accident, to the best of his knowledge. The ventilation when he was last down was, as usual, good. He did use powder to blast rock on the Monday; he heard the explosions of his seven shots, but did not see the explosions. He was not working on the Tuesday, because he was attending a meeting at his chapel, and not because the ventilation was bad. He did not bare a seam of coal on the Monday, there being still six inches of dirt between him and the coal. He saw no gas. It was the stone coal. He knew Jacob Hughes, John Roberts, and John Ellis, but they were working on the other tunnel. Their working place was in the main level, about four yards from him. Jacob Hughes is still living. The one tunnel was very little behind or before the end of the other. The main tunnel was, he thought, the first of the two, but they were very nearly equal. There was ventilation in both tunnels. The air went in at one tunnel and returned by the other. He could go into the face of the work as soon as ever he heard the shots go off. He preferred the fan to the furnace. He fired his shots with the lamp. He set light to the fuse with a lamp which was not locked. He never saw any gas there when he went to the fuse with the open lamp.

MR. HIGSON: They should not blast where the atmosphere is not pure, but they may in such case fire with touch paper; or they sometimes use a probe wire, which is pushed through the gauze and made red hot, and with this the fuse is fired.

JOHN WILLIAMS, manager of the colliery, sworn: He had been manager 13 years. The plan produced was correct, but at the time of the accident the faces would be a little more (a few yards) forward. It showed the state of the workings to Aug. 13 last, when the last drillings were made. The distance would be 900 yards from the pit-eye to the face of the coal. The depth of the workings is 135 yards. He was at home when the accident occurred. He was on the bank the previous evening, but had not been down for about a week. The ventilation was then in a very good state in the tunnels. The air-ways have been enlarged recently to about 5 feet, by the direction of Mr. P. HIGSON, the Government Inspector of Coal Mines. That improved the ventilation very much. The fan drew one-third more air than the furnace. They had had a furnace working for years. The fan had been at work for some years. It had been stopped since the air-ways had been enlarged, because the furnace was found sufficient, but had recently been substituted for the furnace, because it was more powerful. He had seen the bearings of machinery throwing off sparks through being heated. The fan was in good order. On the morning of the accident a man came to tell him the fan was on fire. This was about 5 o'clock on the morning of Sept. 26 last. He went immediately, and did all that could be done to put the fire out in order to save life. He stopped the boilers, and got the fire out in about one hour and a half. The woodwork of the shed covering the fan was on fire. As soon as he put the fire out he went into the workings to try to rescue the men. He took some men with him. One of the bodies, that of Henry Roberts, was recovered when he first went down, and his watch was going in his pocket. He was quite dead, but there were no marks of burning whatever. There were horses found living in the workings not far from where the bodies were found. He (Roberts) was the fifth brought up, as Richard Gittins had been down a little before him (J. Williams), while he was getting out the fire. The horses were brought out from the stables, so that the fire-damp had not backed to that time; the horses were not brought up until all the bodies had been recovered. Only the stoppings between the two levels had been blown down by the explosion. It would cost 1000*l*, at least to restore the air-ways into the state they were in before the accident, and it would take 10 or 12 months to restore them, unless they are better than what they had yet seen them. It would be attended with great risk to human life to restore them, because they had 400 or 500 yards of single road. There was only a little air passing by this road, the stoppage being caused by the black shale falling like houses. If the roads were opened there would be no chance of arriving at a conclusion as to the cause of the accident. In his opinion, the cause of the explosion was the lighting of the gas on the surface, and as shown below. After the explosion there was much gas about the fan. The reason of this opinion is, that he heard the explosion whilst he was engaged in extinguishing the fan. He saw lightning and heard thunder the previous evening. The cause of the ignition at the surface must have been

from the heating of the axle, from a naked light being taken to the fan or from the lightning. It had been sworn that no naked light was taken to the fan. The men who came up alive would have heard the explosion.

MR. HIGSON: The man who had charge of the engine saw the fan on fire, preceded by a small report; he then went so far as the gate at the road, when there was a greater explosion.

JOHN WILLIAMS continued: He supposed the gas fired at surface, because if underground the fan would have been blown into the air, and because about the fan the damage appears to be the worst. He supposed gas was fired, because after the explosion he saw a blaze of gas on the fan. He never saw explosive gas coming through the fan upon any occasion prior to the accident, except after the fan had been stopped for repairs. The fan had been at work a few months before the explosion—previously the furnace for a few months—previously to that the fan. He saw some flashes of what he supposed to be gas coming over the furnace the night it was stopped, and the fan set to work as a substitute. The light could be seen at the top of the chimney; it was a little flash now and then. When he was last through the pit he did not go through the entire air-ways, but measured where the men were working, in-by and out-by. The last time he went through the working the gas showed a "hood" in the lamp near the forebreast of the tunnel, issuing from the Dwrboeg seam. There was sufficient air going through the thrilling to prevent its exploding in the lamp, though it showed a "hood." The thrilling was within  $\frac{1}{2}$  yard from the face. The gas was coming with water from the face. He could only hear a noise, but there were no blowers. The gas was swept away from the face with the air. Some places, such as the tunnel beyond the five-quarter coal, were quite free. He had known the fan to take fire 2½ years ago. It was a smaller fan. It fired while the engines were under repairs; the young man attending the fan carried a shovel of live coals to the fan. Since then screen-walls have been built. The youth was lighting a fire in the engine-house. The gas flamed in the fan without explosion. The outlet from the pit to the fan was smaller than now. Upon that occasion the fire was extinguished; no explosion followed. He was the principal manager of the pit, and was responsible for its management. He generally consulted Mr. Eytton before making improvements. It is the duty of Richard Gittins to look to their air-ways. He did not consider any further improvements necessary to ventilate the colliery, unless it were to be enlarged. All that the Government Inspector had advised to be done had been done. The air-ways had been made about the size the Inspector told him. It was two or three years since those instructions were given. At the time of the accident they were about that size; previously to that they were about 1 yard square. There was more gas previously given off (when the air-ways were small) from the 2-yard coal than at present. The 2-yard coal is not now worked, and the gas has diminished. There was communication between the old workings and the tunnel. The workings are walled off, and in each wall there is a small hole, to allow the gas to come off into the return air-course. There was a little, and only a little, gas coming from these holes when he last saw them. If they had thought there was risk of danger the men would have been stopped. He had been right under the shaft of the fan. The engine-man of the fan had a safety-lamp to oil the fan, because the wind would have blown out a naked light—not from fear of gas. They had not decided upon any plan of continuing the colliery; he would not advise Mr. Eytton to open the air-courses, but to abandon the workings. The colliers were, however, opening the air-ways by Mr. P. HIGSON's instructions. The risk expense, and time of opening was the reason for the advice. He thought it would be better to sink a new shaft than re-open the workings. The fan produced about 5000 ft. to 7000 ft. per minute; it was more at the time of the explosion. It was some two years since the last discussion with Mr. HIGSON about the air-way. The engine made 40 to 43 strokes per minute. The diameter of the fan is about 6½ ft. The fan made about 10 times to each stroke of the engine. The average sweep of the fan would be 4375 ft., and 2 ft. for width=8750 ft. There were from 40 to 60 men employed in the colliery—labourers and cutters. The air did not always go to the end of the workings. He could not say that there were 6000 ft. per minute.

The FORTY-ONE had known the colliery from the commencement, and as all were colliers, they could have no more to guide them as to the cause of the explosion.

MR. EYTON: Mr. A. Eytton has not wished to protract this enquiry, but has brought forward all the evidence he can.

THE CORONER said that they would now hear Mr. HIGSON's report.

MR. HIGSON: The air-courses are nearly closed up, and it would cost much time and expense to set them right. He had collected as much information as he could, and did not think it would be able to give a clue as to the state of the ventilation at the time of the explosion. Had I been able to do so, they might have been guided whether there had been ample provision for safety. He then read his report, which stated:—

"Little or no progress has been made in re-opening the South Mostyn Colliery since the jury were first summoned to enquire into the circumstances which caused the death of ten persons there on Sept. 26 last. I am not, therefore, better prepared now than when we last met here on October 17 to give my opinion of the cause of the explosion, and Mr. Eytton, in a letter addressed to me on the 8th inst., states, that although he has had a strong force of men at work, they have not made one inch of progress for some time, and that he considers it desirable to abandon the old air-courses, which are virtually closed up. If that be imperative, the object contemplated in adjourning the enquiry from time to time will be frustrated, inasmuch as an approximate description of the state of the work in gas and the ventilation of the colliery immediately before the casualty happened, can only be given after a careful inspection thereof when they have been restored to something like the state in which they were at that time. As the investigation now stands, the most natural conclusion to be drawn, though unsupported by direct evidence, is that the return air from the working places in the mine below was coming through the fan in a highly explosive state, and that it was there ignited, either by the engine-man diving the fan so fast, after the stoppage, as to cause the shaft thereof to heat such a extent as to set the wood partition that surrounded it on fire, the flame of which might cause the return air, when vitiated to certain extent with explosive gas, to burn only—without exploding, or that it was ignited at a naked or uncovered light. In either case the result would be similar; if the return air did not contain the proper mixture of inflammable gas it would burn without exploding, but as the flame approached the boundary of the place that contained it and an atmosphere of purer air the mixture might become explosive. It seems, therefore, almost conclusive that when once ignited the flame would rapidly make its way through the body of inflammable air even to the extremity of the workings if it extended so far, but upon coming in contact with pure air, when a more explosive mixture would be formed, it would explode, and not till then, and this in some degree strengthens the evidence of Thomas Griffiths, wherein he states that some time elapsed after discovering the fire before he heard the second noise, which he says was very loud. So far as I have been able to examine the works and premises, it seems to me as if the explosion took place in the return air-course, as the stoppings are blown outward from that into the in-by air-road, and the communication that existed between











**NORTH POOL MINE.**—This LIST will be CLOSED after the 24 December. Shares will be allotted from priority of application.

**NORTH POOL COPPER MINING COMPANY.**

To be incorporated under the Statute limiting shareholders' liability to the amount subscribed.  
Capital £24,000, in 6000 shares of £4 each.  
Deposit, 2s. 6d. per share on application, and 2s. 6d. per share on allotment.  
The remainder by quarterly instalments of 5s. per share, as required for working the mine, of which due notice will be given.  
Directors to be chosen by shareholders at the first meeting.  
BANKERS—Messrs. Bolitho, Sons, and Co., Penzance, Cornwall.  
SOLICITOR—F. W. Snell, Esq., 1, George-street, Mansion House, London, E.C.  
AUDITORS—Messrs. Cooper, Thomas, and Co., 13, George-street, Mansion House, London.  
MANAGING AGENT—Capt. Thomas Foul, late manager of Llaner and other home and foreign mines, now of Camborne, Cornwall.  
ENGINEERS—Messrs. Mitchell and Jenkin, Redruth, Cornwall.  
SECRETARY—J. S. Phillips, 12, St. Michael's-alley, Cornhill, London.  
OFFICES—7, GEORGE YARD, LOMBARD STREET, LONDON, E.C.

A grant to rework the extensive sett called North Pool, Illogan, Cornwall, has been obtained at £20 per annum minimum rent, and 1-18th maximum dues.  
The geological position of North Pool is unsurpassed by any mine in the kingdom, being situated about 1/4 of a mile north of, and parallel to, the celebrated granite hill Carn Brea, around which six square miles have produced at least £5,000,000 sterling profits, by the comparatively small outlay of about £600,000, and more mineral wealth than has been returned by all the other mines of Devon and Cornwall by tenfold outlay.  
It is a very extensive sett, Cook's Kitchen (and other mines) being only about one-fourth as long on the lodes, although it has been at work upwards of 200 years, and even now about to become a rich tin mine in depth.

Its immediate neighbours are, on the north and east, the Tolguses; southward, Wheel and Seton Pools, Carn Brea, and Tincort; and westward, the Croftys, Setons, and North Pool Pools.  
North Pool has been worked once, but only to a very limited extent (£61,450 profits were made in eight years, at a cost of only £2180, in about 100 fms. long, and above the 80 fms. level), whereas several of the best mines of this district have been re-worked twice and thrice most profitably, to the depth of from 200 to 300 fms., and still continue very rich and promising, although much less so for the ground first wrought therein.

The promoters consider the old mine a good speculation in depth; but as at least 19-20ths of this lode in such a long sett is quite unexplored at a fair mineral depth, and moreover, four side lodes, almost entirely unworked, they confidently believe it to be an unusually valuable property, and eminently deserving attention and trial.  
Two good engines—a 70-inch for pumping, and a 28-inch for winding and crushing—will be amply sufficient to work the engine and side lodes to a proper depth, and long before this capital is fairly expended good results will, in all probability, be attained.  
Much work has been executed that will speed progress, such as roads, floors, and well- timbered shafts, at a cost of many thousands, which are immediately available for future operations; and the Hayle and Portreath Railway passing through the mine will greatly facilitate the transit of materials and minerals.

The limited liability has been adopted, as a guarantee of good faith to the large portion of the public who prefer it to the unlimited (and sometimes abused) Cost-book System; and to counteract the greatest evil of the former £24,000 is intentionally more than sufficient.

All money will be withdrawn from the bank by cheques signed by two or more directors and the secretary.  
The promoters agree to accept 300 fully paid up shares (as a guarantee of their confidence), and 2s. 6d. per share cash, for the sett, and which shall clear all the preliminary expenses of incorporation, travelling, reporting, mapping, printing, law costs, advertising, and broker's commission, with grants and leases.

Reports with sections and plans of the sett and neighbouring mines were published in the *Mining Journal* of Oct. 5, 1861, from which the most sceptical will see and allow its merits, and that no more has been stated than plain statistical facts will most amply verify.

Applications for prospectus and form of order for shares to be addressed to the secretary.

**EXTRACTS FROM REPORTS.**

W. BOWDEN, Manager of Camborne Vein, and late agent at North Pool Mine.  
Sept. 10, 1861.—I have been engaged in North Pool Mine upwards of eleven years, during which period it made £61,000 profit from the add to the 72, having an almost continuous bunch of copper ore for about 100 fms. in length. I should more particularly call the attention of those entering into this speculation to the western part of this sett, on the engine and side lodes, which part was totally neglected by the late workers. The stratum and indications, as far as seen, are precisely similar to the old mine, where such large deposits of ore existed; and I therefore see no reason why you may not have as good a mine here as the old party had further east. This sett lies on the same run of lodes as the Tolguses on the east and Setons on the west, and being in such a good locality is a speculation rarely to be met with. In conclusion, I may say that as only about 200 fms. long have been explored at a fair mining depth, and that as the sett is 900 fms. long, and contains five lodes, exceedingly little has been worked for this rich district, therefore it is highly probable that many other bunches of ore may be discovered, that will, I have no doubt, lead to large profits; and I can highly recommend it to the mining community.

J. DAW, Manager of Carn Brea Mines, &c.  
Sept. 12, 1861.—I beg to hand you my report of North Pool Mine. This mine is situated in the parish of Illogan, and is bounded on the east by South Tolgus, which is on the same run of lodes, and has given great profit to the adventurers—on the west by North Croft and Wheel Seton. The sett is very extensive, it being about 900 fms. long and 200 fms. wide, with four or five parallel lodes traversing its entire length. These are intersected by cross-cores and elvans, with patches of iron or greenstone. About 500 fms. east of the western boundary a shaft is sunk through the great north lode at 12 fms. below the surface, where it is large, and is supposed to be those of South and Old Tolgus on the east, and the Setons on the west. The most important feature, however, is that there is upwards of half a mile of unexplored ground between the late workings and the Seton Mines; and, judging from the general productiveness of these lodes, it is highly probable that in this ground valuable discoveries may be made. When we look at the very rich locality in which this mine is situated, and the immense returns made from so small a portion of the sett, it certainly does appear that the prospects of the speculation are unusually good.

J. VIVIAN, Manager of North Croft, North Croft, &c.  
Sept. 11, 1861.—In reply to yours of yesterday, I am well acquainted with the district of North Pool Mine, and believe it to be a first-rate piece of mining ground.

W. PASCOE, Manager of South Frances, &c.  
July 25, 1861.—In reply to your kind favour of the 22d inst., respecting the above mine, I beg to say that I know but little about the old workings, but I believe with you that there is an extensive piece of unexplored ground to the north and west of the old mine, which, in such a good locality, ought to be tried. I think you very fortunate to get the sett, and wish you every success in the undertaking.

W. H. REYNOLDS, Manager of Great Retallack, Wheal Unity, &c., of Messrs. Watson and Cuel's firm.  
Sept. 3, 1861.—I am glad to find that you have secured the sett of North Pool Mine, and I know of no ground in the district lying idle that is so deserving of attention. It is an extensive sett, being about 900 fms. long by 200 fms. wide, and traversed by at least five lodes, some of which I suppose to be those of South and Old Tolgus on the east, and the Setons on the west. The most important feature, however, is that there is upwards of half a mile of unexplored ground between the late workings and the Seton Mines; and, judging from the general productiveness of these lodes, it is highly probable that in this ground valuable discoveries may be made. When we look at the very rich locality in which this mine is situated, and the immense returns made from so small a portion of the sett, it certainly does appear that the prospects of the speculation are unusually good.

G. RICKARD, Manager of Great Onslow Consols.  
Sept. 26, 1861.—I have considered the feasibility of North Pool sett as a speculation for further working, and, taking into consideration the fact that very extensive and profitable mines have been, or are being, worked at both ends of the property, the recent richness of the mine itself, the rich locality, and great extent of unexplored ground in the sett, there do not appear to me any sound reasons why the unexplored portions of the engine lode, as well as any parallel lodes, may not prove profitably productive; and I consider if these lodes are properly worked there is a very fair chance of success.

M. EDWARDS, late Manager of Wheal Kitty, &c.  
Sept. 3, 1861.—The extensive and valuable mining property of North Pool is situated in the parish of Illogan, and is closely surrounded on the south, east, and west by some of the most productive and profitable mines in Cornwall. These lodes, however, run the entire length of the sett, and as there is a large amount of unexplored ground in the western part of it I would strongly recommend you to commence operations there, open on the lodes, and give it a vigorous and spirited trial. For this purpose only a moderate amount of capital will be required, which, in my opinion, will not fail, if judiciously laid out, to make a lasting and profitable mine.  
Early application should be made to secure shares, which are being rapidly taken up.

**PARIS LAND COMPANY (LIMITED).**—Notice is hereby given, that the LIST of APPLICANTS for SHARES in this company will be CLOSED on WEDNESDAY, the 20th day of November inst., after which date NO APPLICATION FOR SHARES will be entertained. By order, H. NESBITT, Sec., 85, Gresham House, November 12, 1861.

**ALBERT AND MEDICAL LIFE ASSURANCE,**

7, WATERLOO PLACE, FLEET STREET, LONDON, S. W.  
ESTABLISHED 1838.  
The business of the Medical, Life, and General Life Assurance Society having been amalgamated with the Albert Life Assurance Company, the united business will henceforth be carried on under the above title.  
Accumulated fund exceeds £500,000  
Subscribed capital 447,180  
Paid-up capital 137,000  
Annual income from life premiums, upwards of 220,000  
The new business is now progressing at the rate of more than £25,000 per annum.  
From Prof. Dr. Morgan's report upon the last valuation of liabilities (end of 1858), and the statements of accounts, it appeared at that time that the surplus in favour of the Albert business alone, after providing for every liability, was £192,925 2s. 11d.  
HENRY WILLIAM SMITH, Actuary, 4, C. DOUGLAS SINGER, Sec.

**AUSTRALIA AND NEW ZEALAND**

WHITE STAR EX-ROYAL MAIL CLIPPERS,  
SAILING FROM  
LIVERPOOL TO MELBOURNE on the 1st and 20th of every month.

Passengers holding Victoria passage warrants will be forwarded to Melbourne by these vessels.

Ship. Captain. Register. Burthen. To sail.  
LORD RAGLAN. ROYER. 1900. 5500. Nov. 20.  
BLUE JACKET. CLARKE. 1074. 3300. Dec. 20.

The celebrated clipper ship, *Lord Raglan*, is one of the largest and fastest ships in the world, and has made some of the most rapid passages on record. Her first voyage from Liverpool to Melbourne was made in 79 days, and on her recent voyage from Mauritius to Bombay, with 1300 troops, she performed the voyage in 12 1/2 days, the shortest run ever made. Her accommodations for all classes of passengers are unusually excellent, her saloons being furnished with every desiderata for the voyage, excepting wines and liquors.  
For freight or passage apply to the owners, H. T. WILSON and CHAMBERS, 21, Water-street, Liverpool; or to GRINDLAY and CO., 12, Bishopsgate-street, and 55, Parliament-street; or to SMITH, FRASER, and CO., 116, Fenchurch-street, London.  
Willcox's Australian and New Zealand hand-books sent for two stamps.

**RAILWAY WAGONS.—WILLIAM A. ADAMS AND CO.,**  
MIDLAND WORKS, BIRMINGHAM.  
BROAD AND NARROW GAUGE COAL AND IRONSTONE WAGONS,  
IN STOCK—FOR SALE OR HIRE.

**RAILWAY WAGONS.—WILLIAM HARRISON AND CAMM**  
HAVE ON HAND RAILWAY, COAL, COKE, AND MINERAL WAGONS,  
ON SALE OR HIRE,  
AT THE ROTHERHAM WAGON WORKS, MABRO'.

**THE BIRMINGHAM WAGON COMPANY (LIMITED) HAS**  
RAILWAY WAGONS FOR HIRE.  
Apply to the SECRETARY, 3, Newhall-street, Birmingham.

**THE RAILWAY CARRIAGE COMPANY,**  
OLDBURY, NEAR BIRMINGHAM.  
MANUFACTURERS OF EVERY DESCRIPTION OF RAILWAY PLANT AND  
IRONWORK.  
NEW AND SECOND-HAND RAILWAY WAGONS ALWAYS IN STOCK  
FOR SALE OR HIRE.  
LONDON OFFICES.—No. 1, MOORGATE.

**JAMES RUSSELL AND SONS, CROWN TUBE WORKS,**  
WEDNESBURY, STAFFORDSHIRE.  
WAREHOUSE.—81, UPPER GROUND STREET, BLACKFRIARS, LONDON, S.  
THE ORIGINAL INVENTORS OF WROUGHT IRON TUBES FOR GAS, WATER, &c.  
LAP-WELDED BOILER TUBES, HOMOGENEOUS TUBES FOR BOILERS, &c.  
GALVANISED AND ENAMELLED TUBES, SCREWING TACKLE, STEAM AND  
WATER GAUGES, AND EVERY VARIETY OF FITTINGS.

**JOB TAYLOR AND CO., SWAN FOUNDRY,**  
OLDBURY, NEAR BIRMINGHAM.  
SOLE PROPRIETORS OF HINTON'S PATENT CUPOLA, which CONSUMES  
FIFTY PER CENT. LESS COKE than any cupola yet invented. MAKERS OF ALL  
KINDS OF MACHINERY connected with the GRINDING and TEMPERING OF  
EVERY SORT OF CLAY OR MARL, and for the MANUFACTURE OF BRICKS,  
TILES, DRAIN PIPES, &c. Also, of HIGH and LOW PRESSURE STEAM EN-  
GINES of any dimensions, and of GENERAL MACHINERY.

**LLOYD AND LLOYD, ALBION TUBE WORKS,**  
BIRMINGHAM.  
MANUFACTURERS OF PATENT LAP-WELDED IRON TUBES, FOR  
LOCOMOTIVE, MARINE, AND STATIONARY BOILERS.  
IMPROVED HOMOGENEOUS METAL TUBES.  
ALL DESCRIPTIONS OF TUBES AND FITTINGS FOR GAS, STEAM AND  
WATER, PLAIN, GALVANISED AND ENAMELLED.  
GUN-METAL STEAM GUN COCKS, WATER GAUGES, &c.

**SHORTIDGE, HOWELL, AND CO., HARTFORD STEEL**  
WORKS, SHEFFIELD, SOLE MANUFACTURERS OF HOWELL'S PATENT  
HOMOGENEOUS METAL PLATES FOR BOILERS, LOCOMOTIVE FIRE BOXES,  
AND TUBES, COMBINING THE STRENGTH OF STEEL with the MALLEABILITY  
OF COPPER. RUSSELL AND HOWELL'S PATENT CAST STEEL TUBES.  
McCONNELL'S PATENT HOLLOW RAILWAY AXLES.—For prices and terms, apply  
to SHORTIDGE, HOWELL, and Co., Hartford Steel Works, Sheffield; or Messrs.  
HARVEY and Co., 12, Haymarket, London.

**CORNISH BORER STEEL.—Upwards of ONE HUNDRED**  
AND SIXTY MINES are SUPPLIED with this STEEL, and the DEMAND  
for it is RAPIDLY INCREASING.—For terms, apply to K. MURPHY and Co., Forest  
Steel Works, near Coleford, Gloucestershire.

**CYANOGEN STEEL, CAST STEEL, SHEAR STEEL, and**  
IMPROVED FOREST & BLISTER STEEL supplied to order by ROBERT  
MURPHY and Co., Forest Steel Works, near Coleford, Gloucestershire.  
Address to the Works, Coleford.

**TRACTION ENGINES FOR STEEP INCLINES.**  
It is proposed to form a limited company, with a capital of £7000, in 70 shares of  
£100, for the purpose of bringing into use the projected invention of Mr. John Marshall,  
C.E., by means of which engines can be constructed for the conveyance of from 10 to  
50 tons, according to size and weight of engine, on ordinary roads having an inclination  
as steep as 1 in 4.—Specifications, with formula, on application to L. C. HERTSLET, Esq.,  
3, Hanover-square, London.

**NOTICE TO RAILWAY COMPANIES.—A RAILWAY**  
SIGNAL of a NOVEL DESCRIPTION (patented) is NOW IN OPERATION  
on the MANCHESTER and ALTRINCHAM RAILWAY, which GIVES NOTICE OF  
THE APPROACH of a TRAIN HALF A MILE OFF, and, if required, can announce it at  
any other given distance. It is novel and simple in its construction, not a single com-  
plicated movement in it, and when laid down will not require repairs for years. A model  
may be seen at the *Mining Journal* office, 26, Fleet-street, London, in the course of a  
week, and a gentleman will shortly call on the different railway companies centering in  
the metropolis to give any required explanations.

**NICKEL AND COBALT REFINING, AND GERMAN SILVER**  
WORKS, 16, OZZELL STREET NORTH, BIRMINGHAM.  
STEPHEN BARKER begs to inform the Trade that he has the following articles  
for sale:—  
REFINED METALLIC NICKEL. | OXIDE OF COBALT. (WIRE)  
REFINED METALLIC BISMUTH. | GERMAN SILVER—IN INGOTS, SHEET  
NICKEL AND COBALT ORES PURCHASED.

**BELL BROTHERS** beg to intimate that, having become SOLE  
LICENSEES in the United Kingdom of PNOX DEVILLE'S METHOD OF PRO-  
DUCING PURE ALUMINIUM, they are now in a POSITION to SUPPLY, from their  
works here, both this metal and its compound with copper, known under the name of  
ALUMINIUM BRONZE.—Newcastle-on-Tyne, September, 1860.

**TO COAL OWNERS AND COKE BURNERS.**  
**MACKWORTH'S PATENT COAL WASHER,**  
OR PURIFIER.—This MACHINE will EXTRACT the HAIR and ALL  
HEAVY IMPURITIES from SMALL COAL at a COST of TWOPENCE PER TON.  
—For particulars and references, apply to the makers, A. and T. FAY, Temple-gate Works,  
Bristol; or to Mr. JOS. RIDER, Basinghall-street, Leeds.

**THE ALTEN AND QUENANGEN MINING COMPANY**  
(LIMITED).—Notice is hereby given, that the ANNUAL GENERAL MEETING  
of the shareholders will be HELD at the offices of the company, No. 2, New Broad-street,  
on FRIDAY, the 22nd day of November inst., at Two o'clock precisely, for the purpose  
of receiving a report from the directors, and statement of accounts, to 31st March last.  
London, Nov. 11, 1861. By order of the Board, EDWARD J. COLE, Sec.

**GENERAL MINING COMPANY FOR IRELAND**  
(LIMITED).—Notice is hereby given, that the HALF-YEARLY GENERAL  
MEETING of the shareholders of this company will be HELD at their office, on MON-  
DAY, the 23rd of December next, at the hour of Twelve o'clock noon, to receive the ac-  
counts for the past half-year, and to transact the general business of the company.  
EDWARD MORAN, Sec.  
Office, 23, Westmoreland-street, Dublin, November 8, 1861.

**SILVER VEIN MINING COMPANY (LIMITED).**—Notice  
is hereby given, that a SPECIAL GENERAL MEETING of the shareholders of  
this company will be HELD at these offices, on Tuesday, the 19th of November current,  
at One o'clock precisely, for the purpose of receiving a report from the directors, a state-  
ment from Mr. Squire, and resolving on a call of 2s. 6d. per share.

W. W. MANSELL, Manager.  
Registered Offices, 3, Cannon-street, London, E.C., November 6, 1861.

**THE GREAT TIWANHAIL MINING COMPANY**  
(LIMITED).—Notice is hereby given, that the ORDINARY GENERAL MEETING  
of the shareholders of the above company will be HELD on TUESDAY, the 19th  
inst., at Twelve o'clock at noon precisely, at the offices of the company, No. 3, Johnson's-  
buildings, Inner Temple, London, for the following purposes, viz.:—  
To receive the reports of the directors and auditors.  
To elect two directors in the place of F. J. Partridge, Esq., and A. Keith Falconer,  
Esq., who retire in rotation, but are eligible for re-election.  
To elect two auditors in the place of Messrs. Wm. Flower and F. Cates, who then re-  
tire, but are eligible for re-election.

To submit to the shareholders, and, if approved, passing resolutions for authorising, in  
accordance with the powers and provisions of the Joint-Stock Companies Act, 1856, and  
of the Articles of Association of the company, the raising of further capital by the crea-  
tion and issue of new shares.  
And all such other resolutions, if any, as may be required for giving effect to the fore-  
going objects.  
And to transact the other general business of the company.  
By order of the Board, SHREWSBURY and TALBOT, Chairman.  
J. H. MACKENZIE, Sec.  
And notice is hereby further given, that the register of shareholders and transfer books  
of the company will be closed until after the said meeting.  
Dated November 1, 1861. J. H. MACKENZIE, Sec.

**COALS.—GEORGE J. COCKERELL AND CO.,**  
Coal Merchants to Her Majesty. Cash, 27s. per ton. Best coals only.  
Central Office, 13, Cornhill, E.C.

**GEORGE J. COCKERELL AND CO.,**  
Eaton Wharf, Grosvenor Canal, and Office, 1A, Lower Belgrave-place, Piccadilly, S.W.

**GEORGE J. COCKERELL AND CO.,**  
Purfleet Wharf, Earl-street, Blackfriars, E.C.

**GEORGE J. COCKERELL AND CO.,**  
Sunderland Wharf, Peckham Canal, S.E.

FIFTEEN to TWENTY, and even TWENTY-FIVE PER CENT. PER ANNUM  
upon current value of shares, in CORNISH TIN and COPPER MINES.  
Dividends payable two-monthly or quarterly.  
To receive the reports of the directors and auditors.  
Maps per post of the Buller and Basset, Great Voe, Alfred Consols, the Providence and  
Margaret Districts, 2s. 6d. each.  
CORNISH MINES, well selected, pay better than any other description of securities, are  
freer from risks, and entail less responsibilities than banks and other joint-stock com-  
panies. Shares bought and sold on commission of 3s. or 4s. per cent.  
Money advanced at 10 per cent. annually, for short or long periods, upon approved  
Mining Shares.—78, Lombard-street, London, E.C.

**MESSRS. TREDINNICK AND CO., MINING ENGINEERS,**  
SEND their SELECTED LIST OF SOUND PROGRESSIVE AND DIVI-  
DEND SHARES upon the receipt of a Fee of One Guinea.

Review of Cornish and Devon Mining Enterprise, 5s. per copy.  
Maps per post of the Buller and Basset, Great Voe, Alfred Consols, the Providence and  
Margaret Districts, 2s. 6d. each.

CORNISH MINES, well selected, pay better than any other description of securities, are  
freer from risks, and entail less responsibilities than banks and other joint-stock com-  
panies. Shares bought and sold on commission of 3s. or 4s. per cent.  
Money advanced at 10 per cent. annually, for short or long periods, upon approved  
Mining Shares.—78, Lombard-street, London, E.C.

**REDFORD IRONWORKS, TAVISTOCK.**

**NICHOLLS, WILLIAMS, AND CO.** have generally a GOOD  
STOCK of SECOND-HAND MINING MATERIALS FOR SALE. They also  
MANUFACTURE STEAM ENGINES of every description on the newest principle.  
Castings and wrought-iron work made at the shortest notice. Machinery sent to all parts  
of the world. Steam boilers and chains warranted of the best description.

**CREASE'S PATENT EXCAVATING MACHINERY,**  
for SUPERSEDING the SLOW and EXPENSIVE USE of MANUAL LABOUR  
in SINKING SHAFTS, DRIVING LEVELS, TUNNELLING, &c., is guaranteed to  
drive through any rock of average hardness at a minimum rate of 1 fm. per diem, and  
to sink shafts at the rate of 2 fms. in three days.  
Mr. CREASE will undertake contracts for sinking shafts, driving levels, &c., at an en-  
ormous reduction of time and great saving in cost.  
Applications to be addressed to Mr. GEORGE T. CURTIS (sole agent), 17, Gracechurch-  
street, London, E.C.

By providing the power of calculating the time and cost to explore a certain depth  
and extent of ground, speculation in mining will be assimilated to commercial pursuits,  
with this unmistakable advantage—that when the ground has been once carefully and  
judiciously selected, and operations properly and systematically carried out for its de-  
velopment, there would be far less chance of unsatisfactory results than are met with  
by merchants and manufacturers in the usual routine of their business. As this im-  
portant invention must beneficially interest the landowners, mine proprietors, mer-  
chants, and miners, we opine it will meet with immediate adoption.—*Mining Journal*.

**WALKER'S STAMPING MACHINES AND STEAM**  
ENGINES, for REDUCING ALL KINDS of MINERAL ORES to IMPAL-  
PABLE POWDER, have been in use for these last ten years in all the leading mines of  
the United Kingdom and the Colonies of the British Empire; as also his PATENT  
PUMPS and WATER LIFTS, and for economy of working and durability cannot be  
equalled. MANUFACTORY, 17, COWPER STREET, CITY ROAD, LONDON.

**HALL AND WELLS, PATENTEES AND**  
MANUFACTURERS OF SUBMARINE TELEGRAPH CABLES, CABLES,  
&c.—TELEGRAPH CONDUCTORS INSULATED WITH INDIA RUBBER at £2 per  
mile and upwards. CABLES WARRANTED TO STAND THE USUAL TEST FOR INSU-  
LATION. Further particulars as to price of cables, &c., can be had on applica-  
tion at 60, Aldermanbury, City, E.C.; and Steam Mills, Mansfield-street, Borough-road,  
Southwark, S.E.

Copper wire covered with silk, cotton, or any other material, to order.

**ASSOCIATION OF BRITISH INVENTORS.**  
The determined hostility evinced in certain influential quarters towards patent  
property, and the strenuous efforts which will probably be made during the next Session  
of Parliament to alter the Laws Relating to Patents, have rendered it desirable that an  
Association of Inventors, and of those interested in the working of patents, should im-  
mediately be organized.  
Gentlemen willing to assist in forming the Association are requested to communicate  
at once with  
H. MARSDEN LATHAM, Hon Sec.  
71, Fleet-street, London.

**PATENT MOVABLE FIRE BAR COMPANY (LIMITED).**  
DIRECTORS.  
SAML. H. BLACKWELL, Esq., Ironmaster, Dudley.  
SAML. THORNTON, Esq., Merchant, Birmingham.  
JONATHAN GRINDROD, Esq., C.E., Liverpool.  
JOHN LLOYD, Esq., Engineer, Lilleshall.

OFFICES.—16, HACKIN'S HEY, LIVERPOOL.

**WRIGHT'S PATENT BARS FOR LOCOMOTIVE, MARINE, AND STATIONARY**  
BOILERS, PUDDLING AND OTHER FURNACES.

The proprietors have great pleasure in recommending the above as the simplest and  
best arrangement in use. The bars have already been adopted by some of the leading  
firms in the Midland Iron District, in various channel and ocean-going steamers, and the  
large breweries in Burton, and have, in every case, given great satisfaction.  
For prices charged, apply at the company's office, Liverpool.  
AGENTS WANTED; also, TENDERS from ironfounders for CASTING the BARS.

**MINERS' DIALS, LEVELS, ANEMOMETERS,**  
PIT BAROMETERS, &c.  
DIALS WITH THE LATEST IMPROVEMENTS.  
APPOINTED MAKER OF HEDLEY'S DIAL.  
BIRAM'S PATENT ANEMOMETER, 4 in., £2 10s.; 6 in., £3 3s.; and 12 in., £4 4s.  
JOHN DAVIS, DERBY, MANUFACTURER OF MINING INSTRUMENTS.  
Price list on application.

**PATENT SAFETY FUSE.—THE GREAT EXHIBITION PRIZE**  
MEDAL was AWARDED to the MANUFACTURERS of the ORIGINAL  
SAFETY FUSE, RICKFORD, SMITH, DAVEY, and PRYOR, who beg to inform Mer-  
chants, Mine Agents, Railway Contractors, and all persons engaged in Blasting Operations,  
that, for the purpose of protecting the public in the use of a genuine article, the PATENT  
SAFETY FUSE has now a thread wrought into its centre, which, being patent right, is  
fallibly distinguishable from all imitations, and ensures the continuity of the gunpowder.  
This Fuse is protected by a Second Patent, is manufactured by greatly improved ma-  
chinery, and may be had of any length and size, and adapted to every climate.  
Address.—RICKFORD, SMITH, DAVEY, and PRYOR, Tuckingmill, Cornwall.

**WIRE-ROPE TESTING.**  
**PUBLIC TEST of A. J. HUTCHINGS AND CO.'S PATENT**  
WIRE-ROPE at LIVERPOOL, FEBRUARY 27, 1861.  
[From the *Daily Post* of March 1, 1861.]

On Wednesday, the 27th of February, a series of EXPERIMENTS on WIRE-ROPE  
took place at the Corporation Testing Works, King's Dock. The specimens tested were  
manufactured by the well-known firm of A. J. HUTCHINGS and Co., of Millwall, London,  
the Contractors to the Lords of the Admiralty and various foreign Governments, the  
character of whose rope is so well known in this country, as well as all parts of the Con-  
tinent. Capt. Ducraft, of H.M.S. *Hastings*, and a number of other gentlemen connected  
with shipping, were present to witness the experiments, all of which were considered  
highly satisfactory, and in every respect sustained the reputation of the manufacturers.  
The following are the results of the experiments:—  
An 8 in. rope bore 70 tons WITHOUT BREAKING.  
Circumference and breaking strain.

10 1/2 tons 14 tons 20 tons 27 tons 29 tons 32 1/2 tons 45 1/2 tons  
N.B.—The 2 1/2, 3, and 4 in. ropes were the sizes actually tested. The remaining sizes  
and strains are comparative.

THE ABOVE ROPES ARE FOR COLLIERY USE.

Size, Inches.	Hutchings and Co.'s wire- rope for ships' rigging. Tested Feb. 27, 1861.	Newall and Co.'s Test of Oct. 29, 1860.	Garnock, Bibby, and Co.'s Test, Oct. 29, 1860.
2 1/2	5 tons 15 cwts.	7 tons 15 cwts.	8 tons 16 cwts.
3 1/2	11 " 14 "	—	—
4 1/2	16 " 10 "	—	—
5 1/2	22 " 8 "	16 " 10 "	18 " 5 "
6 1/2	28 " 10 "	18 " 15 "	—
7 1/2	34 " 10 "	—	—
8 1/2	37 " 16 "	—	—

N.B.—The 2 1/2, 3, and 4 in. ropes were the actual sizes tested. The remaining sizes  
and strains are comparative.

The above tests certified by Mr. McDonald the Superintendent of the Corporation  
Testing Works, Liverpool.

**PATENT LEVER BREAK, FOR RAILWAY WAGONS,**  
doing away with the objectionable break rack. CAN BE APPLIED to EXISTING  
STOCK at a TRIFLING EXPENSE. Royalty moderate. (Models can be seen at  
No. 1, Moorgate, London, E.C.; and the breaks in action at the works of the Railway  
Carriage Company; at the Peterboro' Station, on the Eastern Counties Railway; the  
Tugby Station, London and North-Western Railway; the Cardiff Docks Station, Taff  
Valley Railway; and at the Works, Oldbury, near Birmingham, where all communications  
are requested to be sent.)

**ASSAY OFFICE AND LABORATORIES.**

MESSRS. MITCHELL AND RICKARD beg respectfully to inform their friends  
that they have REMOVED from Dunning's-alley to No. 29, GREAT ST. HELEN'S,  
BISHOPSGATE STREET WITHIN, where the business will be conducted as usual in  
all cases of mineralogical, agricultural, and commercial assays and analyses, at mo-  
derate fees.  
Special instruction to gentlemen desirous of acquainting themselves with expeditious  
methods of ascertaining the value of ores, manures, manufactured and colonial products  
&c., without having recourse to professional assistance.

**SPAIN AND FRANCE.**

Spain is determined to share the advantages resulting from an extended commercial  
intercourse with England. The Vintage Wine Company import Spanish wines at such  
prices as to induce customers to give the preference to sherry instead of to the light wines  
of France.—*Courier*.

Not only excellent in quality and flavour, but remarkable for cheapness—18s. per  
dozen for a genuine mild sherry for the dinner table.—*Star*.

A pure, sound, and palatable wine, and far more fitted for our climate than the thin  
acidic clarets of France.—*Press*.

A really good sherry.—*Morning Star*.

**XERES COMIDA SHERRY,**

Soft, fine body, age and flavour, and genuine.  
Eighteen Shillings per dozen. Pale, Twenty Shillings per dozen.

Quite equal to that for which we have been accustomed to give 60s.—*Atlas*.  
Extraordinary for the money, and that no man need be ashamed to put on his table.—  
*Mark Lane Express*.

Terms.—Cash only. Country orders must contain remittances. Town orders to be  
paid for on delivery.

CARRIAGE.—Orders of two dozen and upwards carriage paid to any railway station in  
England.



## THE MINING SHARE LIST.

DIVIDEND MINES.									
Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.	Shares.	Mines.	Paid.	Last Pr.
4000	Bellford United (copper), Tavistock	2 6 8.	5 1/2.	5 1/2.	12 8 6.	1000	Abbey Consols (id.), Cardigan	2 7 0.	1 ..
240	Boscan (tin), St. Just	20 10 0.	60 ..	..	34 5 0.	1000	Ally-Crib (lead), L. E.	2 8 6.	2 ..
200	Botalack (tin), St. Just	5 0 0.	200 210	..	443 5 0.	1000	Angarrack (copper), Phillack	1 1 6.	1 1/2.
1000	Carn Brea (copper), Illogan	15 0 0.	83 1/2.	77 1/2.	269 10 0.	1000	Ashburton United (cop., tin)	10 0 0.	14 1/2.
2048	Carnyorth (tin), St. Just	3 10 0.	13 1/2.	..	0 19 6.	1000	Bampfild (copper), Devon	0 15 0.	4 ..
300	Cefn Cwm Brwyno (lead), Cardigan	33 0 0.	33 ..	..	9 0 0.	1000	Bedford Consols (copper)	2 0 0.	4 1/2.
50000	Concorre (copper, sulphur), L. E.	1 0 0.	300 64.	31s.	0 9 0.	1000	Berehaven (copper), Ireland	1 0 0.	1 1/2.
2450	Cook's Kitchen (copper), Illogan	17 0 0.	25 ..	29 1/2 30 1/2	0 13 0.	1000	Bickerton (copper), L.	1 0 0.	3 1/2.
15000	Copper Miners of England	75 0 0.	25 ..	..	0 13 0.	1000	Bickley Vale Phoenix (L.)	2 0 0.	2 1/2.
35000	Croft (copper)	100 0 0.	24 ..	..	1 ..	1000	Bilham (lead), L. E.	20 0 0.	20 ..
1058	Cradock Moor (copper), St. Cleer	8 0 0.	26 ..	..	0 9 0.	1000	Boscawell (tin), Penzance	6 5 0.	8 ..
187	Cwm Erddin (lead), Cardigan	7 10 0.	21 ..	..	6 3 0.	1000	Boscawell (tin), St. Austell	6 15 0.	4 ..
128	Cwmystwith (lead), Cardigan	60 0 0.	200 ..	..	227 10 0.	1000	Bosorne & Bollowall, St. Just	6 0 0.	10 ..
280	Derwent Mines (all-lead), Durham	300 0 0.	375 ..	365 375	142 0 0.	1000	Bosworth (tin), Sancerre	1 0 0.	1 1/2.
1024	Devon Gt. Con. (cop.), Tavistock	1 0 0.	375 ..	365 375	767 0 0.	1000	Bottle Hill (tin), Plymouth	1 0 0.	12s. 11s. 12s.
368	Dolcoath (copper, tin), Camborne	128 17 6.	550 ..	..	610 10 0.	1000	Bracon (tin), St. Ives	3 0 0.	22s. ..
3008	Drygwyn (lead), Wales	12 6 0.	70 ..	66 68	90 0 0.	1000	Bronthof (id.), Cardigan	2 0 0.	4 1/2.
512	East Bassett (cop., tin), St. Cleer	3 14 6.	26 1/2.	26 1/2 27	110 0 0.	1000	Brynmawr (id.), Cardigan	1 5 0.	2 1/2.
6144	East Caradon (copper), St. Cleer	3 14 6.	26 1/2.	26 1/2 27	77 10 0.	1000	Bryn Gwio (lead), Flint	5 0 0.	20 1/2.
300	East Darwen (lead), Cardigan	32 0 0.	45 ..	..	0 5 0.	1000	Bryntal, Llandidloes, Montgo	5 7 0.	4 ..
2048	East Wey Lovell (tin), Wendron	2 10 0.	..	..	0 5 0.	1000	Bryntal, Llandidloes, Montgo	5 7 0.	4 ..
1400	Eyan Mining Co. (lead), Derbyshire	5 0 0.	..	..	20 3 4.	1000	Budnick Consols (tin), Perran	1 0 0.	3 1/2.
4940	Fowey Consols (copper), Tawnyard	4 0 0.	..	..	41 9 3.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
2000	Foxdale (id.), L. E.	240 15 1/2.	35 ..	..	64 12 7.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
5000	Frank Mills (lead), Devon	3 18 6.	4 1/2.	4 1/2 4 1/2	0 14 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
6000	Greatest South Tolgus (S. E.), Redruth	0 14 6.	12 1/2.	12 1/2 13 1/2	7 13 6.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
1788	Great Wheel Fortune, Breage	0 0 0.	12 1/2.	12 1/2 13 1/2	0 14 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
2508	Great Wh. V. (tin), Helston	40 0 0.	5 1/2 5 1/2	..	12 6 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
1024	Herodotus (id.), near Liskeard	8 10 0.	24 ..	37 1/2 40	14 7 11.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
1000	Hibernian Mine Company	92 6 0.	27 1/2.	..	7 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
100	Levant (copper, tin), St. Just	2 10 0.	95 ..	..	0 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
400	Lisburne (lead), Cardigan	18 15 0.	110 ..	..	377 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
9000	Marke Valley (copper), Cardigan	4 10 0.	10 ..	9 1/2 9 1/2	1 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
5000	Mendips Hills (lead), L. E.	3 15 0.	13 1/2.	..	2 1 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
1800	Minera Mining Co. (L.), Wrexham	25 10 0.	15 15 1/2	..	75 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
20000	Miner's Co. (cop., lead, coal)	7 0 0.	15 ..	..	449 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
640	Mount Pleasant, Mold	4 0 0.	25 ..	..	15 7 10.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
6000	New Birch Tor and Viller Consols	1 6 6.	2 1/2.	2 1/2 2 1/2	0 3 6.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
6000	North Downs (copper), Redruth	2 3 4.	4 1/2.	4 1/2 5 1/2	0 2 6.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
1266	North Gribbler, Redruth	2 7 6.	6 ..	..	0 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
6000	North Great Work, Breage	1 3 0.	4 1/2.	..	0 2 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
6000	Orsedd (lead), Flintshire	0 8 1/2.	1 1/2.	..	0 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
6400	Par Consols (cop., tin), St. Blazey	1 2 6.	8 ..	7 7 1/2	36 9 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
200	Parya Mines (copper), Anglesey	60 0 0.	485 ..	..	12 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
1712	Polberron (tin), St. Agnes	5 0 0.	5 ..	..	449 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
1120	Providence (tin), Uny Lelant	10 6 7.	45 ..	43 45	60 15 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
16	Rhosomere	60 0 0.	..	..	1250 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
612	South Caradon (cop., tin), St. Cleer	1 5 0.	305 310	..	356 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
612	South Tolgus (cop., tin), Redruth	8 0 0.	40 39 40	..	102 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
496	South Wheel Franks, Illogan	18 18 0.	110 100 115	..	357 5 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
280	Spear Consols (tin), St. Just	31 7 0.	45 ..	..	9 15 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
940	St. Ives Consols (tin), St. Ives	8 0 0.	29 31	..	484 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
8600	Tamar Con. (all-lead), Helston	4 10 0.	13 1/2.	6 1/2 6 1/2	10 13 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
6000	Tincroft (cop., tin), Pool, Illogan	9 0 0.	13 1/2.	..	7 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
672	Trevelyan Consols (tin), St. Ives	11 10 0.	16 ..	..	0 7 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
200	Trumpet Consols (tin), near Helston	57 10 0.	100 ..	..	52 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
1024	Wendron Consols (tin), Wendron	11 10 0.	16 ..	..	8 15 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
6000	West Bassett (copper), Illogan	1 10 0.	15 1/2.	14 16	22 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
60	West Burton Gill (lead), Yorkshire	60 0 0.	..	..	14 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
1024	West Caradon (cop., tin), Liskeard	5 0 0.	40 43 45	..	98 11 3.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
256	West Damsel (copper), Gwennap	87 0 0.	60 ..	..	48 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
6400	West Fowey Consols (tin and copper), St. Austell	7 10 0.	40 35	..	0 14 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
400	W. Wh. Seton (cop., tin), Camborne	47 10 0.	295 305	..	322 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
512	West Bassett (copper), Illogan	5 2 6.	85 75 80	..	547 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
256	West Buller (copper), Redruth	5 0 0.	75 80	..	929 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
2950	Wh. Clifford Amalgamated (cop.), Gwennap	30 0 0.	30 35	..	26 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
2000	Wh. Falmouth and Sperris	2 5 0.	8 ..	..	0 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
128	Wh. Friendship (copper), Devon	80 0 0.	90 ..	..	2400 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
612	Wh. Jean (silver-lead), Kea	3 10 0.	18 ..	..	11 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
1024	Wh. Kitty (tin), Uny Lelant	1 7 2.	6 1/2 6 1/2	..	8 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
4800	Wh. Liskeard (lead), St. Ives	4 0 0.	2 1/2.	..	12 10 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
806	Wh. Margaret (tin), Uny Lelant	9 17 4.	40 42	..	69 0 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
100	Wh. Mary (tin), Lelant	36 2 6.	440 ..	..	280 5 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
1024	Wh. Mary Ann (id.), Menheniot	8 0 0.	14 1/2 15	..	54 7 6.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
80	Wh. Owles, St. Just, Cornwall	70 0 0.	300 ..	..	280 13 0.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.
8000	Wicklow (copper), L. E.	5 0 0.	52 ..	51 1/2	43 17 6.	1000	Buller and Bassett Unit. (cop.)	3 7 6.	1 1/2.

## MINES WITH DIVIDENDS IN ABEYANCE.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
700	Aberdovey (silver-lead), Merioneth	1 10 0.	30 ..	..	0 10 0.
5120	Alford Consols (cop.), Phillack	3 6 6.	18s. 14s. 16s.	..	20 3 0.
124	Bailly (tin), St. Just	11 15 0.	13 ..	..	12 5 0.
1000	Brighton & Froggatt Grove, Derbyshire	3 0 0.	3 1/2.	..	3 0 0.
200	Brynmawr (lead), Flintshire	18 10 0.	25 ..	..	14 0 0.
2500	Central Miners (lead), L. E.	0 15 0.	5 1/2.	..	0 4 0.
6000	Charlotte United, Perran	2 13 2.	1 1/2.	..	0 13 0.
2000	Colicambe (copper), Lamerston	5 0 0.	12 ..	..	3 5 0.
256	Concorre (copper), Tavistock	20 0 0.	77 1/2.	65 70	85 0 0.
256	Copper Hill (copper), Redruth	48 0 0.	115 105 110	..	210 0.
4076	Deven and Cornwall (copper)	4 10 0.	6 ..	..	210 0.
672	Ding Dong (tin), Gwennap	39 2 6.	15 ..	..	16 7 6.
12800	Drake Walls (tin), Calstock	2 1 0.	18s. 3 1/2	..	0 13 6.
248	East Falmouth (all-lead), Kenwyn, Kea	3 5 0.	3 1/2.	..	0 7 6.
128	East Pool (tin), Pool, Illogan	24 5 0.	240 ..	..	305 0 0.
6000	General Mining Co. for Ireland (cop., id.)	4 0 0.	5 1/2.	..	1 0 8.
486	Gribbler and St. Aubyn (cop.)	48 10 0.	13 15 16	..	23 0 0.
119	Great Work (tin), Gwennap	100 0 0.	110 ..	..	221 10 0.
300	Harward United (lead), Flintshire	40 0 0.	10 ..	..	3 0 0.
1000	Hingston Down (cop.), Calstock	4 19 0.	4 1/2.	..	2 16 0.
8000	Kelly Bray (lead, copper), Callington	4 0 0.	21s. ..	..	0 6 0.
20	Laxey Mining Company, Isle of Man	100 0 0.	1200 ..	..	1420 0 0.
470	Newtownards Mining Co., Co. Down	50 0 0.	35 ..	..	56 0 0.
700	North Roscar (copper), Camborne	18 0 0.	16 17 18	..	157 0 0.
812	Roswarne United (cop.), Gwennap	19 6 4.	22 21 22 1/2	..	33 10 0.
19600	Sordridge Con. (cop.), Whitcomb	10 16 0.	14s. 16s.	..	10 10 0.
128	South Crinns (copper), St. Austell	19 0 0.	28s. ..	..	60 0 0.
20000	St. Day United (tin and copper), Redruth	6 0 0.	3 1/2.	..	0 3 6.
4000	Tolvadden (copper), Marazion	6 0 0.	2 1/2.	..	0 13 0.
20000	Valley of Towry (lead), Carnarvon	0 13 6.	..	..	0 5 9.
1024	West Providence (tin), St. Erith	10 0 0.	3 1/2.	..	33 1 9.
4096	Wh. Edward (cop.), Calstock	7 7 6.	2 1/2.	..	4 0 0.
1024	Wh. Grylls (tin), Perran	2 4 0.	7 1/2 11 1/2 12 1/2	..	1 12 0.
8000	Wh. Kitty (tin), St. Agnes	4 16 0.	1 ..	..	0 18 6.
648	Wh. Lelant (tin), Wendron	33 0 0.	7 ..	..	31 0 0.
1024	Wh. Margaret (tin), Uny Lelant	13 10 0.	..	..	131 15 0.
396	Wh. Raton (tin), Camborne	58 10 0.	119 105 107 1/2	..	131 15 0.
1040	Wh. Trevelyan (all-lead), Liskeard	5 17 0.	15 1/2 16 1/2 16 1/2	..	43 15 0.
1024	Wh. Tremayne (tin), Gwennap	12 2 6.	5 ..	..	10 2 6.

## FOREIGN MINES.

2464	Burra Burra (cop.), South Australia	5	0 0.	125 ..	116	..	265 0 0.	5	0 0.	June, 1861
12000	Cobalt Copper Co. (cop.), Cuba	5	0 0.	35 ..	35 36	..	99 12 0.	1	0 0.	July, 1861
10000	Copland Mining Company, Chili	16	0 0.	8 ..	..	..	6 5 0.	0	5 0.	Jan. 1861
15000	East Indian Coal, Calcutta	10	0 0.	10 ..	..	..	7 1/2 per cent.	..	..	Yearly.
70000	English and Australian	5	0 0.	3 1/2.	..	..	1 5 0.	0	2 6.	Aug. 1861
25000	Gen. Mining Assoc., Nova Scotia	120	0 0.	23 1/2.	..	..	18 5 0.	1	0 0.	June, 1861
68000	Kapunda Mining Co., Australia	1	0 0.	2 ..	1 1/2 2 1/2	..	8 0 0.	0	2 0.	June, 1861
15000	Linares (id.), Potosi, Bolivia	3	0 0.	7 1/2.	7 8	..	8 2 0.	0	3 4.	July, 1861
10000	Lustaniani (of Portugal)	2	0 0.	2 1/2.	..	..	8 2 0.	0	3 4.	July, 1861
108815	Marigueta and New Granada	1	0 0.	2 1/2.	..	..	9 6 0.	1	6 1/2.	Aug. 1859
100000	Port Phillip (gold), Clunes	1	0 0.	1 1/2.	1 1/2 1 1/2	..	4 0 0.	0	1 0.	July, 1861
11000	St. John del Rey (L.), Brazil	15	0 0.	51 ..	50 51	..	43 6 0.	2	10 0.	June, 1861
20000	West Canada Mining Company	1	0 0.	1 1/2.	..	..	0 2 0.	0	2 0.	June, 1860
4568	Maudlin Mines	2484 3/4	0 0.	24 1/4	1 1/4	..	1 1/2	0 0.	1 1/2	..
4940	Merilyn (lead), Flint	..	..	..	3 1 1/2	..	..	..	..	..
29000	Merryfield (lead), Flint	..	..	..	0 12 0	..	..	..	..	..
3400	Michell (lead), Flint	..	..	..	0 1 0.	..	..	..	..	..
18000	Mold (lead), Flint	..	..	..	17 0 1/2	..	..	..	..	..
6111	Molland (cop.), S. Moulton	..	..	..	2 8 0	..	..	..	..	..
5000	Nance Valley	..	..	..	0 5 0	..	..	..	..	..
5000	Nanases (tin, copper), Kes.	..	..	..	3 1/2	..	..	..	..	..
5000	Nantes (tin), Kes.	..	..	..	..	..	..	..	..	..
2400	Nant-y-Jago (id.), Merioneth	3	0 0.	2 1/2	..	..	..	..	..	..
250	Nant-y-Mines (id.), Montgom.	20	0 0.	..	..	..	..	..	..	..
6400	Nether Heath (lead), Duffon.	..	..	..	0 15 6	..	..	..	..	..
6400	N. Crow Hill (id.), St. Stephen	2	0 0.	1 1/2	..	..	..	..	..	..